

# List of All Chemicals

## P *Mentha x piperita* (Lamiaceae)

Common name(s)

Peppermint

Subspecies

*nothosubsp. piperita*

How used

GRAS

\*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Chemical	Plant Part	Low PPM	High PPM	StdDev	*Reference
(+)-ALPHA-PINENE	Leaf	14.0	145.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
(+)-ISOMINTLACTONE	Leaf	0.03	0.3		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
(+)-LIMONENE	Leaf	160.0	1590.0	-1.41	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
(+)-PULEGONE	Leaf	--	440.0	-1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

### Activities (4)

Antiacetylcholinesterase IC50=136 ug/ml

Antiacetylcholinesterase IC50=0.9 mM

Irritant ZEB

Perfumery ZEB

(-)-LIMONENE	Leaf	--	--		Jim Duke's personal files.
(-)-LINALOOL	Leaf	--	5100.0	1.23	*
(-)-LINALYL-ACETATE	Leaf	--	3900.0	1.0	*
(-)-MENTHOL	Leaf	570.0	22800.0	1.29	*

### Activities (4)

Antiacetylcholinesterase IC38=164 ug/ml

Antiacetylcholinesterase IC38=1.2 mM

Pesticide

Termiticide

Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

(-)-MENTHONE	Leaf	310.0	12400.0	1.48	*
--------------	------	-------	---------	------	---

### Activities (2)

Antiacetylcholinesterase IC39=164 ug/ml

Antiacetylcholinesterase IC50=1.4 mM

(-)-MINTLACTONE	Leaf	0.3	3.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1,3-DIMETHYL-CYCLOHEXANONE	Essential Oil	--	--	*	
1,4-DIMETHOXY-BENZENE	Leaf	0.001	0.01		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

1,8-CINEOLE	Leaf	45.0	3000.0	-0.14	*
-------------	------	------	--------	-------	---

### Activities (67)

(-)Chronotropic 87 nl/ml	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
(-)Inotropic 87 nl/ml	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.

Allelopathic	
Allergenic	
Anesthetic	
Anthelmintic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antiacylcholinesterase IC50=41 ug/ml	
Antiallergic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antibacterial 50 ppm	
Antibronchitic	
Anticariogenic	
Anticatarrh	Martindale's 29th
Anticholinesterase IC50=50-70	
Antifatigue	
Antihalitotic	American Health, 12(4): 17, 1993.
Antiinflammatory	
Antilaryngitic	
Antinociceptive	
Antipharyngitic	
Antiplaque	
Antirheumatic	
Antirhinitic	
Antiseptic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antisinusitic	
Antispasmodic	
Antistaphylococcic 50 ppm	
Antitussive	
Antiulcer	
CNS-Stimulant	
Candidicide	
Carcinogenic	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals.</i> VCH Publishers, New York. 3560-4253.
Choleretic	
Convulsant	
Counterirritant	Martindale's 29th
Cytochrome-P450- Inducer	
Decongestant	
Degranulant 0.3 ul/ml	
Dentifrice	Martindale's 29th
Edemagenic inj	
Expectorant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
FLavor FEMA 1-200	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Gastroprotective	
Gram(+)icide	
Gram(-)icide	
Hepatotonic	
Herbicide IC50=78 uM	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.
Hypotensive	
Inflammatory inj	
Insectifuge	
Irritant	Rinzler, C. A. 1990. <i>The Complete Book of Herbs, Spices and Condiments. Facts on File</i> , New York. 199 pp.
Myorelaxant	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp.
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp.
Neurotoxic	
P450-Inducer	
Pediculicide 2.3 x pyrethrin	
Perfume	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Rubefacient	Martindale's 29th
Secretogogue	
Sedative	
Spasmogenic	
Surfactant	

## Hydroxylase-inducer

Transdermal

Trichomonicide

LD100=1,000 ug/ml

1-MENTHYL-BETA-D-GLUCOSIDE	Plant	--	--	J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.	
2,6-DIMETHYL-PYRIDINE	Leaf	--	--	*	
2-BUTYL-ISOVALERIC-ACID-METHYL-ESTER	Leaf	2.0	20.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-ETHYL-HEX-AN-1-OL	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-HYDROXY-BENZALDEHYDE	Leaf	0.003	0.03	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-METHYL-BUT-2-EN-1-AL	Leaf	0.007	0.07	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-METHYL-BUTYRIC-ACID-METHYL-ESTER	Leaf	0.004	0.04	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-METHYL-CINNAMALDEHYDE	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-PHENYLETHANOL	Leaf	0.2	2.0	1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2-PHENYLETHANOL-ACETATE	Leaf	0.05	0.5	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-PHENYLETHANOL-BUTYRATE	Leaf	0.05	0.5	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-PHENYLETHANOL-ISOBUTYRATE	Leaf	0.05	0.5	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-PHENYLETHANOL-N-VALERATE	Leaf	0.4	4.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
2-PROPYL-5-PHENYL-PYRIDINE	Leaf	--	--	*	
3(5',5'-DIMETHYL-TETRAHYDROFURAN-2'-YL)-BUT-CIS-2-EN-1-OL	Essential Oil	1.15	2.26	-0.71	*
3,4-DIMETHOXY-BENZALDEHYDE	Leaf	0.002	0.02	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
3,4-DIMETHOXY-SUDACHIUTIN	Leaf	--	--	*	
3,4-DIMETHYL-PSEUDACHITIN	Leaf	--	--	*	
3,4-DIMETHYL-SUDACHITIN	Leaf	--	--	*	
3,6-DIMETHYL-6-OXO-OCTANOIC-ACID	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
3,6-DIMETHYL-7-OXO-OCTANOIC-ACID	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
3,6-DIMETHYL-7-OXO-OCTANOIC-ACID-ETHYL-ESTER	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
3-METHYL-CYCLOHEXANONE	Leaf	0.4	4.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
3-PHENYL-4-PROPYL-PYRIDINE	Leaf	--	--	*	
3-PHENYL-PYRIDINE	Leaf	--	--	*	
4-HYDROXY-4-METHYL-CYCLOHEX-2-EN-1-ONE	Leaf	0.07	0.7	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
4-METHYL-2-PHENYL-PENT-2-EN-1-AL	Leaf	0.006	0.06	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
5,6-DIHYDROXY-3',4',7,8-TETRAMETHOXY-FLAVONE	Leaf	--	--	*	
5-ETHYL-2-METHYL-PYRIDINE	Leaf	--	--	*	
5-HYDROXY-3',4',6,7-	Leaf	--	--	*	

5-METHYL-2-(2'-OXO-3'-BUTYL)-PHENOL	Leaf	0.05	3.85	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
5-METHYL-2-(3'-OXO-3'-PENTYL)-PHENOL	Leaf	0.01	0.04	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
5-METHYL-2-PHENYL-HEX-2-EN-1-AL	Leaf	0.003	0.03	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
5-METHYL-HEPTAN-3-ONE	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
5-O-DEMETHYL-NOBILETIN	Leaf	--	--	*	
6-METHYL-HEPT-5-EN-2-ONE	Leaf	0.01	0.1	-1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6-METHYL-JASMONATE	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
ACETALDEHYDE	Plant	--	--	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.	

#### Activities (6)

Addictive 8 ug/kg	Science News, 145: 294.
Fungicide	
Perfumery FEMA 4-25	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Respiraparalytic	
Tyrosinase-Inhibitor ID50=43 ug/ml	

ACETIC-ACID	Plant	--	--	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
-------------	-------	----	----	--

#### Activities (16)

Acidulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, Londón. 791 pp.
Antibacterial 5,000 ppm	
Antitotic	Martindale's 28th
Antisalmonella	
Antivaginitic 1-2%	
Expectorant	Martindale's 28th
Fungicide	Martindale's 29th
Keratogenic	
Mucolytic	Martindale's 29th
Osteolytic	
Perfumery FEMA 6,000-40,000 ppm	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Protisticide	Martindale's 29th
Spermicide	Martindale's 28th
Ulcerogenic	HerbalGram No. 20, page 9.
Verrucolytic	

ALANINE	Leaf	1950.0	9135.0	-0.81	USDA's Ag Handbook 8 and sequelae)
---------	------	--------	--------	-------	------------------------------------

#### Activities (3)

Antioxidant	Larson, R.A. 1987. Review Article Number 30. The Antioxidants of Higher Plants. <i>Phytochemistry</i> . 27: 969-978.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Oxidant	Larson, R.A. 1987. Review Article Number 30. The Antioxidants of Higher Plants. <i>Phytochemistry</i> . 27: 969-978.

ALPHA-AMORPHENE	Essential Oil	--	--	*
ALPHA-CADINENE	Essential Oil	--	--	*

ALPHA-CAROTENE	Plant	--	--	*
----------------	-------	----	----	---

#### Activities (7)

Anticancer	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.
Anticancer (Liver)	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.
Anticancer (Lung)	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.
Anticancer (Skin)	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.

carotene

Colorant

Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, Londón. 791 pp.

Previtamin-A

#### ALPHA-CAROTENE

Leaf -- --

Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

#### Activities (7)

Anticancer	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Anticancer (Liver)	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Anticancer (Lung)	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Anticancer (Skin)	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Antiproliferant 10 x beta-carotene	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Colorant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, Londón. 791 pp.
Previtamin-A	

#### ALPHA-COPAENE

Essential Oil -- -- \*

#### ALPHA-GURJUNENE

Essential Oil -- -- \*

#### ALPHA-PINENE

Leaf 5.0 230.0 -0.21 \*

#### Activities (28)

Allelochemic	
Allergenic	
Antiacne	
Antibacterial	
Antifeedant	
Antiflu	Economic & Medicinal Plant Research, 5: 195.
Antiinflammatory	500 mg/kg
Antipneumonic	
Antiseptic	
Antispasmodic	
Antistaphylococcic	
Antiviral	Economic & Medicinal Plant Research, 5: 195.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Coleoptophile	
Expectorant	Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp.
FLavor FEMA 15-150	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Herbicide IC50=30 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Insecticide 0.82 uM/fly	
Insectifuge 50 ppm	
Insectiphile	J. Stored. Prod. Res., 22:141, 1986.
Irritant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
P450-2B1-Inhibitor IC50=0.087 uM	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Sedative	Lawrence Review of Natural Products, Jun-90.
Spasmogenic	
Tranquilizer	Lawrence Review of Natural Products, Jun-90.
Transdermal	

#### ALPHA-TERPINENE

Plant -- 20.0 -0.47 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

#### Activities (13)

ACE-Inhibitor 100 ug/ml (weak activity)

Acaricide

Aldose-Reductase-Inhibitor 100 ug/ml Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakujii Kenkyusho Nenpo, (20): 95-101.

Antiacetylcholinesterase IC50=1.0 mM

Antinitrosaminic

Antispasmodic

Insecticide 0.86 uM/fly

Insectifuge

P450-2B1-Inhibitor IC50=0.76 uM

Perfumery

Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

Spasmogenic

#### ALPHA-TERPINEOL

Essential -- -- \*

#### Activities (23)

ACE-Inhibitor 100 ug/ml (weak activity)

Aldose-Reductase-Inhibitor 100 ug/ml Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.

Allelopathic Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.

Antiacne

Antibacterial MIC=800-1,600 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Anticancer

Anticariogenic MIC=800-1,600 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Antiinflammatory

Antiproliferant

Antiseptic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Cicatrizant ED50=240 ug/g mus

FLavor FEMA 5-40 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Insecticide 1.29 uM/fly

Interleukin-6-Inhibitor

Mosquitofuge > Deet

Motor-Depressant Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC

Nematicide MLC=1 mg/ml Shoyakugaku Zasshi, 44: 183.

Perfumery Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Pesticide

Sedative Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC

Termiticide IC100=5 mg/g

Transdermal

Vulnerary ED50=240 ug/g mus

#### ALPHA-THUJONE

Essential -- -- \*

#### Activities (6)

Abortifacient Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

Antibacterial J. Ess. Oil Res. 7: 271.

Emmenagogue Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

Insecticide

Larvicide Misra, L.N. and Singh, S.P. Alpha-Thujone, The Major Component Of The Essential Oil From Artemisia vulgaris Growing Wild In Nilgiri Hills. Journal of Natural Products, 49: 941, 1986.

Pesticide

#### ALPHA-TOCOPHEROL

Plant -- -- \*

#### Activities (32)

Antialzheimeran

Antiangular

Antiarthritic

Antiasthmatic

Antiatherosclerotic Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp.

Anticancer

Anticataract

Antidementia	
Antidiabetic	Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp.
Antiinfarctal	Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp.
Antiinfertility	
Antiischemic	
Antimaculitic	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antineuropathic	
Antioxidant 5 x quercetin	
Antioxidant IC34=10 uM	
Antiparkinsonian	
Antiradicular 5 x quercetin	
Antiretinotic	
Antirheumatic	
Antistroke	
Antitumor	
Antitumor (Bladder)	
Antitumor (Prostate)	
Antitumor (Stomach)	
Antitumor-Promoter	
Cancer-Preventive	
Cardioprotective	
Circulotonic	
Immunomodulator	

ALPHA-TOCOPHEROL	Leaf	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
------------------	------	----	----	---

#### Activities (32)

Antialzheimeran	
Antianginal	
Antiarthritic	
Antiasthmatic	
Antiatherosclerotic	Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp.
Anticancer	
Anticataract	
Anticonvulsant Synergen	
Antidementia	
Antidiabetic	Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp.
Antiinfarctal	Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp.
Antiinfertility	
Antiischemic	
Antimaculitic	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antineuropathic	
Antioxidant 5 x quercetin	
Antioxidant IC34=10 uM	
Antiparkinsonian	
Antiradicular 5 x quercetin	
Antiretinotic	
Antirheumatic	
Antistroke	
Antitumor	
Antitumor (Bladder)	
Antitumor (Prostate)	
Antitumor (Stomach)	
Antitumor-Promoter	
Cancer-Preventive	
Cardioprotective	
Circulotonic	
Immunomodulator	

ALUMINUM	Leaf	9.0	62.0	-0.71	*
----------	------	-----	------	-------	---

**Activities (5)**

Antisilicotic	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.
Antivaginitic	Martindale's 28th
Candidicide	Martindale's 28th
Encephalopathic	Martindale's 29th
Pesticide	

## AMYL-ALCOHOL

Plant	--	--	*
-------	----	----	---

**Activities (1)**

Flavor FEMA 35-3,500 ppm	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
--------------------------	--

## AMYL-VALERATE

Leaf	0.1	1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
------	-----	-----	--

## ANETHOLE

Leaf	0.001	0.01	-0.49	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
------	-------	------	-------	--

**Activities (36)**

Allergenic	
AntiINF-kB	
AntiTNF	
Antibacterial MBC=200 ug/ml	
Antigenotoxic 40-400 mg/kg oral mus	
Antihepatotic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiinflammatory	
Antioxidant	
Antiradicular	
Antisalmonella MIC=200 ug/ml	
Antiseptic 200 ug/ml	
Antispasmodic	
Antitumor	
Antiyeast	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Carminative	Merck 11th Edition
Dermatitogenic	
Digestive	Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp.
Estrogenic	Australian J. Med Herbalism, 7: 29.
Expectorant	Martindale's 29th
Fungicide	Wolf, R.B. Effects Of p-Methoxycinnamaldehyde From Star Anise And Related Cinnamic Acid Derivatives On Velvetleaf Germination. Journal of Natural Products, 49(1): 156-158, 1986.
Gastrostimulant	
Hepatotoxic 695 mg/kg oral mus/days	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Immunostimulant	Economic & Medicinal Plant Research, 1: 124.
Insecticide	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Irritant	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.
Lactagogue	
Leucocytogenic	Economic & Medicinal Plant Research, 1: 124.
Mutagenic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Nephroprotective	Toxicol Appl. Pharmacol. 1996.
Pesticide	
Secretogogue	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Secretolytic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Sweetener 13 x sucrose	
Sympathomimetic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

## ARGININE

Plant	1730.0	8105.0	-0.6	USDA's Ag Handbook 8 and sequelae)
-------	--------	--------	------	------------------------------------

**Activities (14)**

Antidiabetic?	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Antinecephalopathic	Martindale's 29th
Antihepatitic	Martindale's 29th
Antihypertensive	
Antiimpotence	

g/day	
Antioxidant?	
Aphrodisiac 3 g/day	
Diuretic	
Hypoammonemic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
NO-Genic	
Pituitary-Stimulant	
Spermigenic 4 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Vasodilator	

ASCORBIC-ACID	Leaf	30.0	201.0	-0.43	*
---------------	------	------	-------	-------	---

### Activities (112)

Acidulant FEMA 6,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Aldose-Reductase-Inhibitor	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance.</i> John Wiley & Sons, New York. 272 pp. \$24.95
Analgesic 5-10 g/day	
Angiotensin-Receptor-Blocker	
AntiAGE 2,000 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance.</i> John Wiley & Sons, New York. 272 pp. \$24.95
AntiCFS 500-1,000 mg	
AntiCTS 1,000 mg 3x/day	
AntiCrohn's 50-100 mg/day/orl/man	Martindale's 29th
AntiLyme 500-2,000 mg	
AntiRaynaud's 500 mg 1-2x/day	
Antiaggregant	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance.</i> John Wiley & Sons, New York. 272 pp. \$24.95
Antiaging 400 mg/day	
Antiallergic	
Antialzheimeran 2,000-6,000 mg/day	
Antiarthritic 0.2-1 g/day	
Antiasthmatic 1,000 mg/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antiatherosclerotic	
Antibacterial	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Anticataract 350 mg/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Anticataract 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance.</i> John Wiley & Sons, New York. 272 pp. \$24.95
Anticataract 1 g 3x/day	
Anticervicaldysplastic 1,000-2,000 mg/day	
Anticlimacteric 500-5,000 mg/day	
Anticold 1-2 g/man/day	
Antidecubitie 500 mg/man/2x/day	Martindale's 28th
Antidementia	
Antidepressant 2,000 mg/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antidiabetic	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance.</i> John Wiley & Sons, New York. 272 pp. \$24.95
Antidote (Aluminum)	Economic & Medicinal Plant Research, 6: 189.
Antidote (Cadmium)	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antidote (Lead)	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antidote (Paraquat)	Martindale's 28th
Antieczemic 3.5-5 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antiedemic 1 g/man/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antinecephalitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antiendometriotic 2,000 mg/day	
Antifatigie 500-1,000 mg	
Antifibrotic 1,000-2,000 mg	
Antigallstone 1,000-3,000 mg/day	
Antigastritic	
Antigingivitic	
Antiglaucomic 2 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antihangover 1,000 mg	
Antihemorrhagic 1 g/man/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antihepatitic 2-6 g/man/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antihepatotoxic	Economic & Medicinal Plant Research, 6: 189.

Antihistaminic 2 g/day orl man	
Antihypertensive	
Antiinfertility 1 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiinflammatory	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antileptic 1.5 g/man/day	Martindale's 28th
Antilithic 1,000-3,000 mg/day	
Antimaculitic	
Antimeasles	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antimenopausal 500-5,000 mg/day	
Antimigraine	Martindale's 29th
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antineuramidase	
Antinitrosic 1 g/man/day	Martindale's 28th
Antiobesity 1 g 3x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiorchitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiostearthritic 1 g 2x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiosteoporotic 500 mg/day	
Antioxidant 100 ppm	
Antiparkinsonian 1 g 2-3x/day	
Antiparotitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiperodontitic 1 g 2x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antipneumonic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antipodriac	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antipoliomyelic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antipyretic	Economic & Medicinal Plant Research, 6: 189.
Antiradicular	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antiretinotic	
Antirheumatic	
Antirhinitic 1,000 mg 3x/day	
Antiscorbutic 10 mg/man/day	Martindale's 28th
Antiseptic MIC=3.3-217 mg/ml	Martindale's 28th
Antiseptic 4-8 g/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antishingles	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antispasmodic 500-5,000 mg/day	
Antistress 500-1,000 mg	
Antisyndrome-X 1-4 g/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antitumor (Gastric)	
Antitumor (Lung)	
Antiulcer	
Antiviral 1-5 g/day	
Apoptotic 1-10 mM	
Asthma-preventive 1,000 mg/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Beta-Adrenergic Receptor Blocker	
Beta-Glucuronidase-Inhibitor 1.5 g/day/man	
Calcium-Antagonist	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Cold-preventive 1-2 g/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Collagenic	
Detoxicant	
Diuretic 700 mg/man/orl	
Fistula-Preventive	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Hypocholesterolemic 300-1,000 mg/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Hypoglycemic	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Hypotensive 1,000 mg/man/day	
Immunomodulator	
Immunostimulant	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Interferonogenic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Lithogenic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Mucolytic 1 g/woman/day	Martindale's 28th

Uricosuric 4 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Urinary-Acidulant	Martindale's 29th				
Vasodilator					
Vulnerary	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
ASH	Leaf	21009.0	141000.0	0.39	*
ASPARTIC-ACID	Leaf	4430.0	20750.0	-0.4	USDA's Ag Handbook 8 and sequelae)
<b>Activities (3)</b>					
Antimorphinic					Martindale's 28th
Neuroexcitant					Martindale's 28th
Roborant					Merck 11th Edition
AZULENE	Plant	--	--		Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
<b>Activities (10)</b>					
Antiallergic	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.				
Antibacterial 500 ppm	Valnet, J. 1982. The Practice of Aromatherapy. Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp.				
Antihistaminic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Antiinflammatory	Pakistan Encyclopedia Planta Medica. 1986.				
Antipyretic	HerbalGram No. 20, page 40.				
Antiseptic 6-500	Valnet, J. 1982. The Practice of Aromatherapy. Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp.				
Antispasmodic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Antiulcer ED50=150 (orl)					
Hepatoregenerative	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Pesticide					
BENZOIC-ACID	Leaf	0.02	0.2	-1.04	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<b>Activities (20)</b>					
Allergenic	Martindale's 28th				
Anesthetic					
Antibacterial 33-1,250 ppm					
Antibacterial MBC=800 ug/ml					
Antitotic	Martindale's 28th				
Antipyretic					
Antisalmonella MIC=800 ug/ml					
Antiseptic 800 ug/ml					
Antiyeast MFC=1,600 ug/ml					
Choleretic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, Londón. 791 pp.				
Expectorant					
FLavor FEMA 250	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Fungicide MFC=1,600 ug/ml					
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Pesticide					
Phytoalexin	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Tyrosinase-Inhibitor ID50=710 uM					
Tyrosinase-Inhibitor ID50=640 uM					
Uricosuric					
Vulnerary					
BENZYL-ALCOHOL	Leaf	0.01	0.1	-0.92	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<b>Activities (9)</b>					
Allergenic	Martindale's 29th				
Anesthetic	Martindale's 28th				
Antiodontalgic	Martindale's 28th				
Antipruritic					

Flavor Fema 200-1,200		Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry			
Fungicide					
Pesticide					
Sedative		Jim Duke's personal files.			
BENZYL-CYANIDE	Leaf	0.002	0.02		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
BETA-BETULENOL	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
BETA-CAROTENE	Leaf	35.0	238.0	-0.1	*
<b>Activities (53)</b>					
Allergenic					
Androgenic?					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
AntiPMS					
Antiacne					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiaging					
Antiarthritic					
Antiasthmatic					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Anticancer					Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Anticarcinomic					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Anticervicaldysplastic					
Anticoronal 50 mg/man/2 days					
Antihyperkeratotic					
Antiichthyotic					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antileukoplakic					
Antilipoperoxidant IC71=50 ug/ml					
Antilupus 150 mg/man/day/2 mos					Martindale's 28th
Antimaculitic					
Antimastitic					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimutagenic					Economic & Medicinal Plant Research, 6: 235.
Antioxidant					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiozenic					
Antipapillomic					
Antiphotophobic 30-300 mg/man/day					Martindale's 29th
Antipityriasis					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiporphyrin 30-300 mg/man/day					Martindale's 28th
Antiproliferant					Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Antipsoriac					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiradicular					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antirheumatic					
Antistress					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antitumor					Simon, P.W. Carrots and Other Horticultural Crops as a Source of Provitamin A Carotenes. HortScience, 25(12): 1495, 1990.
Antitumor (Breast) IC45=60 ug/ml					
Antitumor (CNS) IC43=45 ug/ml					
Antitumor (Colon) IC43=45 ug/ml					
Antitumor (Lung) IC30=60 ug/ml					
Antitumor (Prostate)					
Antitumor (Stomach) IC26=45 ug/ml					
Antiulcer 12 mg 3x/day/man/orl					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiulcer 15,000-25,000 IU/day					
Antixerophthalmic					Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
COX-1-Inhibitor IC78=50 ug/ml					
COX-2-Inhibitor IC82=50 ug/ml					
Cancer-Preventive 22 ppm					Jim Duke's personal files.
Chemopreventive					
Colorant					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Gastroprotective					
Immunostimulant 180 mg/man/day/orl					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Interferon-Synergist					
Mucogenic					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Phagocytotic					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Prooxidant 20 ug/g					
Thymoprotective					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

BETA-CARYOPHYLLENE	Leaf	8.0	80.0	-0.3	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
--------------------	------	-----	------	------	--

BETA-COPAENE	Essential Oil	--	--	*
--------------	---------------	----	----	---

BETA-IONONE	Leaf	0.3	3.0	-0.87	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
-------------	------	-----	-----	-------	--

**Activities (13)**

Allergenic

Antibacterial MIC=200 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. *J. Agric. Food Chem.* 41: 1102-1105.Anticariogenic MIC=100 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. *J. Agric. Food Chem.* 41: 1102-1105.

Antimelanomic IC50=140 uM/l

Antitumor Yu, S.G., Anderson, P.J., and Elson, C.E. 1995. Efficacy of B-Ionone in the Chemoprevention of Rat Mammary Carcinogenesis. *J. Agric. Food Chem.* 43: 2144-2147.

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Cytochrome-P450-Inducer

Fungicide

Hypocholesterolemic Yu, S.G., Anderson, P.J., and Elson, C.E. 1995. Efficacy of B-Ionone in the Chemoprevention of Rat Mammary Carcinogenesis. *J. Agric. Food Chem.* 43: 2144-2147.

Nematicide MLC=1 mg/ml Shoyakugaku Zasshi, 44: 183.

P450-Inducer

Pesticide

Trichomonicide LD100=100 ug/ml

BETA-PINENE	Leaf	10.0	400.0	0.16	*
-------------	------	------	-------	------	---

**Activities (13)**

Allergenic

Antiinflammatory

Antiseptic Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley &amp; Sons, New York. 649 pp.

Antispasmodic

Candidicide

FLavor FEMA 15-600 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Herbicide Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Insectifuge Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

Irritant Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

Spasmogenic Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

Transdermal

BETA-THUJONE	Essential Oil	--	--	*
--------------	---------------	----	----	---

**Activities (5)**

Abortifacient Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

Antibacterial J. Ess. Oil Res. 7: 271.

Emmenagogue Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

Insectifuge

Pesticide

BETA-YLANGENE	Essential Oil	--	--	*
---------------	---------------	----	----	---

BETAINE	Leaf	--	--	*
---------	------	----	----	---

**Activities (14)**

Abortifacient

Antigastritic Martindale's 29th

Antihomocystinuric

Antimyoatrophic

Bruchiphobe Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

Cardioprotective

Emmenagogue  
Ethanolytic  
Expectorant  
Hepatoprotective  
Lipotropic  
Mucogenic  
Pesticide

Wealth of India.

BICYCLOLEMENE	Plant	--	--	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
BISABOLENE	Essential Oil	--	--	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
BOVOLIDE	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
BUTAN-2-ONE	Essential Oil	0.001	0.01	*
CADINENE	Essential Oil	--	--	*

#### Activities (4)

Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
FLavor FEMA 400-4,000	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	

CAFFEIC-ACID

Shoot -- -- \*

#### Activities (102)

Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.
Allergenic	
Analgesic	
AntiHIV EC50=200 ug/ml	
AntiLegionella	
Antiadenoviral	Economic & Medicinal Plant Research, 5: 207.
Antiaggregant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiaging	
Antiatherogenic	
Antibacterial	
Anticancer	
Anticarcinogenic	Economic & Medicinal Plant Research, 6: 189.
Antidepressant	
Antiedemic	Economic & Medicinal Plant Research, 6: 189.
Antielastase IC50=93 um/l	
Antielastase IC50=86 ug/ml (475 uM)	
Antiescherichic	
Antiflu	Economic & Medicinal Plant Research, 5: 207.
Antigonadotropic	Jim Duke's personal files.
Antihemolytic 25 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antihepatoadenomic 200 ppm diet orl mus	
Antihepatotoxic	
Antiherapeutic 50 ug/ml	
Antiherapeutic EC50=>50 ug/ml	
Antihistaminic	
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.
Antihyperthyroid	
Antiinflammatory	
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antileukotriene	
Antimelanogenic	
Antimutagenic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antinitrosaminic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.

Antioxidant 50 uM	
Antioxidant IC57=30 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 30 mM	
Antioxidant 1.3 x Vit. E	
Antioxidant 1/2 BHA	
Antiperoxidant IC50=44 uM	Planta Medica, 57: A54, 1991.
Antiperoxidant IC35=200 ug/ml	
Antiperoxidant IC85=100 ug/ml	
Antiproliferant	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antiprostaglandin	
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. Phytochemistry. 36(3): 579-583. 1994.
Antiradicular 1/3 quercetin	
Antiradicular 30 mM	
Antiradicular IC50=32-35 uM	
Antiseptic	
Antispasmodic EC50=3.4-15 uM	Phytotherapy Research, 4: 73.
Antistaphylococcal	
Antistomatitic	Economic & Medicinal Plant Research, 5: 207.
Antisunburn	
Antithiamin	Phenolic Compounds in Food and Their Effects on Health, 69.
Antithyroid	Jim Duke's personal files.
Antitumor 200 ppm diet orl mus	
Antitumor (Skin)	
Antitumor-Promoter IC42=10 uM	Cancer Research, 48: 5941.
Antiulcerogenic	
Antivaccinia	Economic & Medicinal Plant Research, 5: 207.
Antiviral IC50=62.5 ug/ml	
Anxiolytic	
CNS-Active	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
COX-2-Inhibitor IC32=100 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic 2% (diet)	
Chemopreventive	
Chalagogue	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Choleretic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Co-carcinogenic	
Collagen-Sparing	
Cytoprotective	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Cytotoxic TC50=200 ug/ml	
DNA-Active	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
DNA-Protective	
Diuretic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Fungicide MIC=0.4 mg/ml	
Hepatocarcinogenic 400 ppm diet orl mus (in the absence of alcohol)	
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210.
Hepatotropic	
Histamine-Inhibitor	
Immunostimulant	
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.
Leukotriene-Inhibitor	
Lipoxygenase-Inhibitor IC27=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Lipoxygenase-Inhibitor IC50=62-148 uM	
Lyase-Inhibitor IC50=94-164 uM	
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Pesticide	

Prostaglandinogenic	
Sedative 500 mg	
Sunscreen IC50=2.5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Sunscreen IC91=5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Sunscreen IC98=25 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Tumorigenic	Jim Duke's personal files.
Vulnerary	
Xanthine-Oxidase-Inhibitor IC50=39.21 uM	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.

CALCIUM	Leaf	2414.0	16200.0	-0.15	*
---------	------	--------	---------	-------	---

#### Activities (28)

AntiPMS 1 g/day	
Antiallergic 500 mg/day	
Antianxiety	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiarrhythmic 500-1,500 mg	
Antiarthritic 1,000 mg/day	
Antithrombotic 500 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Anticlimacteric 1,000-1,500 mg/day	
Antidepressant	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidote (Aluminum)	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidote (Lead)	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antihyperkinetic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antihypertensive	
Antinsomniac	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antimenopausal 1,000-1,500 mg/day	
Antioesity	
Antiosteoporotic 500-2,000 mg/day	
Antiperiodontitic 750 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antirheumatic 1,000 mg/day	
Antistress 500-1,500 mg/day	
Antititic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Anxiolytic 500-1,500 mg/day	
Calcium-Channel-Blocker	
Diuretic	
Hypocholesterolemic 500 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Hypotensive 1 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Laxative 1,000-1,200 mg	
Tranquilizer 500-1,500 mg/day	
Vasodilator	

CAMPHENENE	Leaf	2.0	25.0	-0.18	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
------------	------	-----	------	-------	--

#### Activities (9)

Allelopathic	Wright,C.W.(Ed)2002. <i>Medicinal&amp;Aromatic Plants-Industrial Profiles</i> .Artemisia.344pp.Maffei,M.(Ed)2002. <i>Vetiveria</i> .The Genus <i>Vetiveria</i> .Taylor&Francis,NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999. <i>Tea Tree</i> .The Genus <i>Melaleuca</i> .Harwood Acad.Pub.Amsterdam,Netherlands.
Antilithic?	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antioxidant	Jim Duke's personal files.
Expectorant	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
FLavor FEMA 15-175	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Hypocholesterolemic?	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Pesticide	
Spasmogenic	Fitoterapia No.59-1984.

CARBOHYDRATES	Leaf	82993.0	557000.0	-0.44	*
---------------	------	---------	----------	-------	---

CARVACROL	Essential Oil	--	--	*
-----------	---------------	----	----	---

#### Activities (37)

Allergenic	
Anesthetic	

	pp.
Antialzheimeran?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antiatherosclerotic IC50=5.53 uM	
Antibacterial MIC 170-290	Chalchat, J.C. et Garry, R.P.*; Bastide, P., Fabre, F. et Malhuret, R. Correlation Composition Chimique/Activite Antimicrobienne: V - Contribution a la Comparaison de 2 Methodes de Determination Des Cm. Plantes medicinales et phytotherapie, 25: 184-193.
Antibacterial MIC=39-625	Russell, G. B., Phytochemical resources for crop protection, N. Z. J. Technol., 2, 1986, 127-134.
Anticholinesterase?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antidiuretic	Lawrence Review of Natural Products, Mar-92.
Antiinflammatory IC50=4 uM	
Antimelanomic IC50=120 uM/l	
Antioxidant	Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEO5: 153-8.
Antioxidant (LDL) IC50=5.53 uM	
Antiplaque MIC=39- 625 ug/ml	Osawa, K., Matsumoto, T., Maruyama, T., Takiguchi, T., Okuda, K., and Takazoe, I., Studies of the antibacterial activity of plant extracts and their constituents against periodontopathic bacteria, Bull Tokyo Dent. Coll., 31 (1), 1990, 17-21
Antiprostaglandin	
Antiradicular 600 x thymol	Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEO5: 153-8.
Antiseptic 1.5 x phenol	
Antispasmodic	
Antistaphylococcic	
Antistreptococcic	
Antitussive	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Candidicide MIC<0.1 ug/ml	
Candidicide 100- 150 ug/ml	
Carminative	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Cyclooxygenase- Inhibitor #NAME?	
Enterorelaxant	J. Aromatherapy 4: 22.
Expectorant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
FLavor FEMA 10- 125	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Insectifuge	
Irritant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Nematicide MLC=1 mg/ml	
Pesticide	
Prostaglandin- Inhibitor	
Tracheorelaxant	
Trichomonicide LD100=150 ug/ml	
Vermifuge	

CARVEOL	Essential Oil	--	--	*
---------	------------------	----	----	---

### Activities (1)

CNS-Stimulant

CARVEOL-ACETATE	Essential Oil	--	--	*
-----------------	------------------	----	----	---

CARVONE	Leaf	4.0	132.0	-0.26	USDA's Ag Handbook 8 and sequelae)
---------	------	-----	-------	-------	------------------------------------

### Activities (19)

Allergenic

Antiacetylcholinesterase  
IC50=1.4-1.8 mM

Antiproliferative

Antiseptic 1.5 x phenol Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)

CNS-Stimulant

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Candidstat

Carminative Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.

FLavor FEMA 80-3,000 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Insecticide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Pesticide	
Sedative	Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Trichomonicide LD100=300 ug/ml	
Vermicide	

CARYOPHYLLENE-OXIDE	Essential Oil	--	--	*
---------------------	---------------	----	----	---

#### Activities (8)

Antiedemic	Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhuce ma' ( <i>Lavandula latifolia</i> Vill.)2). <i>Chem. Pharm. Bull.</i> 38(8): 2283-2284, 1990.
Antifeedant	Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-Öne and Caryophyllene Oxide. <i>Insect Sci. Applic.</i> 14(1): 93-99, 1993.
Antiinflammatory	Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhuce ma' ( <i>Lavandula latifolia</i> Vill.)2). <i>Chem. Pharm. Bull.</i> 38(8): 2283-2284, 1990.
Antitumor	Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove ( <i>Eugenia caryophyllata</i> ) As Potential Anticarcinogenic Agents. <i>Journal of Natural Products</i> 55(7): 999-1003, 1992.
Calcium-Antagonist ED50=32 uM gpg	
Fungicide	
Insecticide	Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-Öne and Caryophyllene Oxide. <i>Insect Sci. Applic.</i> 14(1): 93-99, 1993.
Pesticide	

CEDRENE	Essential Oil	--	--	*
---------	---------------	----	----	---

#### Activities (1)

Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
-------------------	---

CEDROL	Essential Oil	--	--	*
--------	---------------	----	----	---

#### Activities (3)

Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Pesticide	
Termitecide	Mater Org (Berl), 24:301, 1989.

CHLOROGENIC-ACID	Shoot	--	--	*
------------------	-------	----	----	---

#### Activities (77)

Aldose-Reductase-Inhibitor IC50=1.8 uM rat (strong activity)	Yoshikawa, M., et al. 1999. Medicinal Flowers. I. Aldose Reductase Inhibitors and Three New Eudesmane-Type Sesquiterpenes, Kikkanols A, B, and C, From the Flowers of Chrysanthemum indicum L. <i>Chem Pharm Bull</i> , 47(3): 340-345.
Allelochemic	
Allergenic	
Analgesic	
AntiEBV	Economic & Medicinal Plant Research, 6: 189.
AntiHIV	Economic & Medicinal Plant Research, 6: 189.
AntiLegionella	
Antiatherosclerotic	
Antibacterial	
Anticancer (Colon)	
Anticancer (Forestomach)	
Anticancer (Liver)	
Anticancer (Skin)	
Anticarcinogenic	
Antidiabetic	
Antifeedant	
Antigenotoxic	
Antigonadotropic	Jim Duke's personal files.
Antihemolytic 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antihepatotoxic	
Antiherapeutic	Economic & Medicinal Plant Research, 5: 194.

Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.
Antihyperthyroid	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Antiinflammatory	
Antileukotriene	
Antimelanogenic	
Antimutagenic	
Antinitrosaminic	
Antioxidant IC53=200 ppm	Huang, M-T., and Ferraro, T. Phenolic Compounds in Food and Cancer Prevention. Phenolic Compounds in Food and Their Effects on Health, Ch.2 p.21.
Antioxidant IC80=12 uM	
Antioxidant IC50=54.2 uM	
Antiperoxidant IC50=36 uM	Planta Medica, 57: A54, 1991.
Antipolio	Jim Duke's personal files.
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. Phytochemistry. 36(3): 579-583. 1994.
Antiradicular 9 x quercetin	
Antiseptic	
Antisunburn	
Antithyroid	Jim Duke's personal files.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antitumor (Colon)	
Antitumor (Forestomach)	
Antitumor (Liver)	
Antitumor (Skin)	
Antitumor-Promoter IC25=10 uM	
Antiulcer	Economic & Medicinal Plant Research, 6: 189.
Antiviral	Vlietinck, A.J. and Dommissie, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.
Autotoxic	
CNS-Active	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
CNS-Stimulant 1/6 Caffeine	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Chemopreventive	
Chalagogue	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Choleretic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Clastogenic	Friedman, M. and Dao, L. 1990. Effect of Autoclaving and Conventional and Microwave Baking on the Ergot Alkaloid and Chlorogenic Acid Contents of Morning Glory ( <i>Ipomoea tricolor</i> Cav. cv.) Heavenly Blue Seeds. J. Agric. Food Chem. 38: 805-808.
Collagen-Sparing	
Diuretic	
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Hepatoprotective	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Histamine-Inhibitor	
Hypoglycemic	
Immunostimulant	
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.
Interferonogenic	Economic & Medicinal Plant Research, 1: 124.
Juvabional	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvistat	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Leukotriene-Inhibitor	
Lipoxygenase-Inhibitor IC23=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.
NO-Genic	
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Oviposition-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Sunscreen	
Sweetener	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Vulnerary	

CHOLINE

Plant -- --

Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

## Activities (20)

Antichoreic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticirrhotic 6,000 mg/man/day	
Anticystinuric	
Antidementia	
Antidiabetic	
Antidyskinetic 150-200 mg/kg/man/day	Martindale's 28th
Antihomocysteine	
Antimanic 15-30 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antinociceptive	
Antisteatotic	
Cardiodepressant	
Cerebrotonic	
Cholinergic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Hepatoprotective	
Hypotensive	
Ileorelaxant	
Lipotropic	
Memorigenic	
Parasympathomimetic (1/1,000th acetylcholine)	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.

#### CHROMIUM

Leaf -- -- \*

#### Activities (24)

Amphiglycemic?	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
AntiAGE 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
AntiCFS 200 ug	
Antiacne	
Antiaging 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antiatherosclerotic 20 ug/day	
Anticorneotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidiabetic 200-1,000 ug	
Antidote (Lead)	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antifatigue 200 ug	
Antiglycosuric 200-1,000 ug	
Antiobesity 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antisyndrome-X 200-800 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antitriglyceride 20 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antitriglyceride 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Cardioprotective	
Energizer	
Hypocholesterolemic 20 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Hypocholesterolemic 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Hypoglycemic 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Hypotensive 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Immunomodulator	
Insulinogenic	
Memorigenic	

#### CINEOLE

Leaf 2.0 1200.0 -0.73 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

#### CINEROL

Essential Oil -- -- \*

#### CINNAMIC-ACID-METHYL-ESTER

Essential Oil -- -- \*

#### CIS-PIPERITOL

Leaf 0.5 5.0 -0.34 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

#### CIS-ROSE-OXIDE

Plant 0.03 0.3 Duke, J. A. Writeups or information summaries on approximately 2,000 economic

CIS-SABINOL	Leaf	0.001	0.01	-1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
CITRONELLIC-ACID	Leaf	0.01	0.1		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
CITRONELLOL	Essential Oil	--	--	*	

#### Activities (15)

Allergenic	
Antibacterial	
Antiseptic	
Antistaphylococcic	
Antistreptococcic	
Candidicide	
FLavor FEMA 1-50	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Fungicide	HerbalGram No. 17.
Herbicide IC50=160 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Nematicide MLC=100 ug/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Merck 11th Edition
Pesticide	
Sedative	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Trichomonicide LD100=300 ug/ml	

COBALT	Leaf	1.4	9.3	-0.24	*
--------	------	-----	-----	-------	---

#### Activities (2)

Cardiomyopathogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Erythrocytogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

COPPER	Plant	3.0	15.0	0.11	*
--------	-------	-----	------	------	---

#### Activities (12)

Antianemic	
Antiarthritic	
Antidiabetic 2-4 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antifatigue	
Antiinflammatory	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antinociceptive	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiosteoporotic	
Cardioprotective	
Contraceptive	Martindale's 28th
Hypocholesterolemic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Immunomodulator	
Schizophrenogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

COSMOSIN	Shoot	--	--	*	
----------	-------	----	----	---	--

#### Activities (4)

Aldose-Reductase-Inhibitor IC40=1 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. Phytochemistry, 23: 1885-1888.
Aldose-Reductase-Inhibitor IC99=10 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. Phytochemistry, 23: 1885-1888.
Antibacterial MIC=500 ug/ml	Planta Medica, 57: A43, 1991.
Candidicide MIC=500 ug/ml	Planta Medica, 57: A43, 1991.

COUMARIN	Leaf	0.02	0.2	-0.99	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
----------	------	------	-----	-------	--

#### Activities (57)

Aldose-Reductase-Inhibitor 10 ug/ml cow (weak activity, 11% inhibition)	Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387
Allelochemical IC100=2 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Analgesic	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances. in Keith L. H. and Walters. D.B.. eds. Compendium of Safety Data

Anesthetic	
Antiaggregant	
Antiandrogenic	Planta Medica, 56(6): 671, 1990.
Antibrucellosic	Gawron, A., Gorski*, G., Glowniak**, K. 1989. Increased proliferation of phytohaemagglutinin (PHA)-stimulated human leucocytes after 8-methoxysoralen treatment. <i>J. Pharm. Pharmacol.</i> 42: 194-195, 1990.
Anticancer (Kidney) 400-7,000 mg/day	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Anticancer (Prostate) 400-7,000 mg/day	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Antidiuretic	
Antiedemic	Shimizu *M., et al. 1990. <i>Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)</i> .2). <i>Chem. Pharm. Bull.</i> 38(8): 2283-2284, 1990.
Antiesherichic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antiinflammatory	Shimizu *M., et al. 1990. <i>Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)</i> .2). <i>Chem. Pharm. Bull.</i> 38(8): 2283-2284, 1990.
Antilymphedemic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Antimelanomic 50 mg/day	
Antimetastatic 50 mg/man/day	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Antimitotic	Pandeya, S.N. 1970. <i>Biological Activity of Adamantyl Derivatives</i> . <i>The Indian Journal of Pharmacy</i> , 33: 7.
Antimononucleotic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antimycoplasmotic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Antipsittacotic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Antipsoriac	Pandeya, S.N. 1970. <i>Biological Activity of Adamantyl Derivatives</i> . <i>The Indian Journal of Pharmacy</i> , 33: 7.
Antitoxoplasmotic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Antitumor 50 mg/day	
Antitumor (GI)	
Antitumor (Kidney) 400-7,000 mg/day	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Antitumor (Prostate) 400-7,000 mg/day	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Bacteristat	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Bruchiphobe	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Carcinogenic 200 mg/kg orl mus	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Cardiodepressant	
Cardiotonic	
Chemopreventive	
DME-Inhibitor IC50=57.5 uM	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134.
Emetic	
Estrogenic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Hemorrhagic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Hepatotoxic 0.8-1.71 mM/kg orl rat	
Hepatotoxic 2,500 ppm diet	
Hepatotoxic 100 mg/kg dog	
Hypnotic	Schultes, R.E. De Plantis Toxicariis e Mundo Novo Tropicale Commentationes XXXVI. <i>Justicia (Acanthaceae) as a Source of an Hallucinogenic Snuff</i> . <i>Economic Botany</i> 44(1): 61-70, 1990.
Hypoglycemic 250-1,000 mg/kg orl	Economic & Medicinal Plant Research, 6: 165
Immunostimulant	
Juvabional	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvistat	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Lymphocytogenic 100 mg/day	Gawron, A., Gorski*, G., Glowniak**, K. 1989. Increased proliferation of phytohaemagglutinin (PHA)-stimulated human leucocytes after 8-methoxysoralen treatment. <i>J. Pharm. Pharmacol.</i> 42: 194-195, 1990.
Lymphokinetic	
Narcotic	
Ovicide	
Pesticide	
Phagocytotic	Planta Medica, 56(6): 671, 1990.
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Respirodepressant	
Rodenticide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Sedative	Schultes, R.E. De Plantis Toxicariis e Mundo Novo Tropicale Commentationes XXXVI. <i>Justicia (Acanthaceae) as a Source of an Hallucinogenic Snuff</i> . <i>Economic Botany</i> 44(1): 61-70, 1990.

CUMIN-ALCOHOL Leaf 0.001 0.01 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

#### Activities (1)

FLavor FEMA 0.5-35 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

CYCLOPENTANOL Leaf 0.01 0.1 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

CYSTINE Leaf 410.0 1920.0 -0.84 USDA's Ag Handbook 8 and sequelae)

#### Activities (2)

Adjuvant Merck 11th Edition

Antihomocystinuric Martindale's 29th

DELTA-DODECALACTONE Leaf 0.001 0.01 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

#### Activities (1)

FLavor FEMA <1-5 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

DELTA-JASMINLACTONE Leaf 0.05 0.5 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

DIHYDRO-LIMONENE-10-OL Essential Oil -- -- \*

DIHYDRO-TERPINEOL-ACETATE Leaf 0.001 0.01 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

DIHYDROCARVONE Leaf -- -- \*

DIMETHYL-SULFOXIDE Essential Oil -- -- \*

#### Activities (1)

Antioxidant Martindale's 28th

DIOSPHENOL Leaf 0.01 0.1 -1.41 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

#### Activities (4)

Antibacterial Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.

Antiseptic Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.

Diuretic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Pesticide

DIPENTENE Essential Oil -- -- \*

#### Activities (7)

Allergenic

Antibacterial Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

Antiviral Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

Expectorant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Irritant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Pesticide

Sedative Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

EO Plant 1000.0 40000.0 2.3 \*

EO Leaf 2980.0 30000.0 1.62 \*

ERIODICTYOL-7-O-RUTINOSIDE Leaf -- 860.0 \*

EUGENOL Essential Oil -- -- \*

#### Activities (76)

Acaricide LD50=5.47 ug/sq cm cf DEET at 37.59 ug/sq Cm

Allergenic

Analgesic Merck 11th Edition

AntiTNF	
Antiaggregant IC50=0.3 uM	Phytotherapy Research, 4: 93.
Antiarachidonate	
Antibacterial 500 ppm	Valnet, J. 1982. The Practice of Aromatherapy. Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp.
Antibacterial MBC=400 ug/ml	
Anticonvulsant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiedemic 100	Phytotherapy Research, 4: 95.
Antiestrogenic	
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antigenotoxic 50-500 mg/kg orl mus	
Antiherpetic IC50=16.2-25.6 ug/ml	
Antiinflammatory (11 uM) IC~97=1,000 uM	
Antikeratotic IC50=16.2-25.6 ug/ml	
Antimitotic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antinitrosating	
Antioxidant IC65=30 ppm	
Antioxidant 10 uM	
Antiprostaglandin 11 uM	
Antiprostaglandin IC50=9.2 mM	
Antipyretic 3 ml/man/day	
Antiradicular EC50=2 ul/l	
Antisalmonella MIC=400 ug/ml	
Antiseptic 3 ml/man/day	
Antiseptic 400 ug/ml	
Antispasmodic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antistaphylococcc	Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles <i>Artemisia</i> .344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus <i>Vetiveria</i> .Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus <i>Melaleuca</i> .Harwood Acad.Pub.Amsterdam,Netherlands.
Antithromboxane	Lawrence Review of Natural Products, Jul-87.
Antitumor	Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove ( <i>Eugenia caryophyllata</i> ) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992.
Antiulcer	
Antiviral IC50=16.2-25.6 ug/ml	
Apifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
CNS-Depressant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
COX-1-Inhibitor IC97=1,000 uM	
COX-2-Inhibitor IC>97=1,000 uM	
COX-2-Inhibitor IC50=129 uM	
Calcium-Antagonist IC50=224 uM	
Calcium-Antagonist IC50=200 uM gpg	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Phytotherapy Research, 4: 93.
Carcinogenic?	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Choleretic	
Cytochrome-P450-Inhibitor	Pizzorno, J. 1998. Total Wellness. Prima Health, a division of Prima.
Cytotoxic 25 ug/ml	Phytotherapy Research, 4: 93.
Dermatitigenic	
Enterorelaxant	J. Aromatherapy 4: 22.
FLavor FEMA 10-500	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Hepatoprotective 100 ppm	
Herbicide	
Insecticide	
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	
Juvabional	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvicide	
Motor-Depressant	Buchbauer et al. e.o.Buchbauer et al.1993.The raneutic prorerties of essential oils and frarances. Chap.12 in Teranishi.R. Butterv.R.G and

Nematicide MLC=2,000 ug/ml	Shoyakugaku Zasshi, 44: 183.
Neurotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficit Nature. The Risk of Herbal Preparations. Ann. Intern. Med. 117(2):165-6; Huxtable, R.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Prostaglandin-Synthesis-Inhibitor 1 mM rbt	Chen, S. J., Wang, M. H., Chen, I. J. 1996. Antiplatelet and Calcium Inhibitory Properties of Eugenol and Sodium Eugenol Acetate. Gen Pharmacol, 27(4): 629-633.
Prostaglandin-Synthesis-Inhibitor IC50=9.2 uM	
Sedative	
Termiticide LD100=5 mg/g	
Trichomonicide LD100=300 ug/ml	
Trichomonistat IC50=10 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Trypsin-Enhancer	Lawrence Review of Natural Products, Dec-93.
Ulcerogenic	Phytotherapy Research, 4: 93.
Varroacide	
Vasodilator	
Vermifuge	

EUPATORIN              Essential -- -- \*  
Oil

#### Activities (8)

Antibacterial	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Anticarcinomic ED50=4.6	Biosyn. Prod. Cancer Chemotherapy (Petit et al)
Antimalarial IC50=65 uM	
Cytotoxic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, reprint 1989.
Emetic	
Immunostimulant	
Parasiticide IC50=65 uM	
Plasmodicide IC50=65 uM	

FAT	Leaf	8046.0	54000.0	-0.05	*
FENCHENE	Essential Oil	--	--		*
FIBER	Leaf	80000.0	370000.0	2.58	*

#### Activities (15)

Angiotensin-Receptor-Blocker	
Antidiabetic	
Antihypertensive	
Antiobesity	
Antitumor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiulcer	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Beta-Blocker	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Diuretic	
Hypocholesterolemic	
Hypotensive 10 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Hypouricemic	
Laxative	
Vasodilator	

FIBER(CRUE)	Leaf	--	114000.0	-0.35	*
FIBER(DIETARY)	Leaf	--	323000.0	-0.62	*
FOLATE	Leaf	1.0	5.0	-0.51	*
GAMMA-DECALACTONE	Leaf	0.001	0.01		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

#### Activities (3)

Cancer- Stitt, P. A. Whv Georae Should Eat Broccoli. Douaherty Co. Milwaukee. WI. 1990. 399 pp.

Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Perfume	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.

GAMMA-JASMINLACTONE	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
GAMMA-TERPINENE	Leaf	2.0	20.0	-0.33	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

#### Activities (11)

ACE-Inhibitor 100 ug/ml (weak activity)	
Acaricide	
Aldose-Reductase-Inhibitor 100 ug/ml	Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.
Antiacetylcholinesterase IC23=1.2 mM	
Antifeedant	Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.
Antioxidant	Jim Duke's personal files.
FLavor FEMA 1-40	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Insectifuge	Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	

GAMMA-TOCOPHEROL	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
------------------	-------	----	----	--

#### Activities (14)

AntiCRP	
Antiatherosclerotic	
Anticancer	
Antiinflammatory	
Antioxidant 10-15 ug/g	
Antioxidant IC43=10 uM	
Antiprostaglandin	
Antitumor	
Cardioprotective	
Cyclooxygenase-Inhibitor	
Hypocholesterolemic	
NO-Inhibitor	
Natriuretic	
PKC-Inhibitor	

GAMMA-TOCOPHEROL	Leaf	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
------------------	------	----	----	---

#### Activities (14)

AntiCRP	
Antiatherosclerotic	
Anticancer	
Antiinflammatory	
Antioxidant 10-15 ug/g	
Antioxidant IC43=10 uM	
Antiprostaglandin	
Antitumor	
Cardioprotective	
Cyclooxygenase-Inhibitor	
Hypocholesterolemic	
NO-Inhibitor	
Natriuretic	
PKC-Inhibitor	

GARDENIN-B	Leaf	--	--	*
GARDENIN-D	Leaf	--	--	*

Antiperoxidant IC<sub>50</sub>=140 uM

Planta Medica, 57: A110, 1991.

GERANIAL	Leaf	0.005	0.05	-0.41	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
----------	------	-------	------	-------	--

**Activities (13)**AntiEBV IC<sub>50</sub>=16 uM

Antiaflatoxin

Antibacterial Onawunmi, G.O., Yisak, W-A., Ogunlana,\* E.O. 1984. Antibacterial Constituents In The Essential Oil Of Cymbopogon citratus (DC.) Stapf. Journal of Ethnopharmacology, 12: 279-286, 1984.

Antitumor (Colon)

Antitumor (Skin)

Antiviral IC<sub>50</sub>=16 uM

Antiyeast

Chemopreventive

Estrogenic

Fungicide

Glutathionigenic

Pesticide

Spasmolytic

GERANIC-ACID	Leaf	0.01	0.1	-1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
--------------	------	------	-----	------	--

GERANIOL-ACETATE	Leaf	0.1	1.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
------------------	------	-----	-----	--	--

GERMACRENE-D	Essential Oil	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
--------------	---------------	----	----	--	--

**Activities (2)**

Pesticide

Pheromone

GERMACRENE-D	Plant	40.0	1600.0	0.93	*
--------------	-------	------	--------	------	---

**Activities (2)**

Pesticide

Pheromone

GLUTAMIC-ACID	Leaf	4090.0	19155.0	-1.01	USDA's Ag Handbook 8 and sequelae)
---------------	------	--------	---------	-------	------------------------------------

**Activities (8)**

Antialkali? 500-1,000 mg/day/orl/man

Martindale's 29th

Antiepileptic

Martindale's 29th

Antihyperammonemic

Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antilithic

Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antiprostatic 125-250 mg 3 x/day

Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, Londón. 791 pp.

Antiretardation

Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, Londón. 791 pp.

Anxiolytic

Merck 11th Edition

Neurotoxic

Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, Londón. 791 pp.

GLYCINE	Leaf	1800.0	8430.0	-0.53	USDA's Ag Handbook 8 and sequelae)
---------	------	--------	--------	-------	------------------------------------

**Activities (12)**

Antiacid

Martindale's 29th

Antialdosteronic

Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antidote (Hypoglycin-A)

Martindale's 29th

Antinecephalopathic

Martindale's 29th

Antigastritic

Martindale's 29th

Antiprostatic 125-250 mg 3 x/day

Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antipruritic

Merck 11th Edition

Antisickling

Ekeke, G.I. and Shode, F.O. 1988. Phenylalanine is the Predominant Antisickling Agent in Cajanus cajan Seed Extract. Planta Medica 56(1): 41, 1990.

Antiulcer

Martindale's 29th

Cancer-Preventive

Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

GUAIACOL	Leaf	0.01	0.1	-1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
----------	------	------	-----	------	--

**Activities (18)**

Anesthetic					
Antibacterial 8,000 ppm	Valnet, J. 1982. <i>The Practice of Aromatherapy</i> . Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp.				
Antidermatitic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Antieczemic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Antisophagitic	Martindale's 29th				
Antiseptic	Martindale's 29th				
Antituberculic					
Cardiodepressant	Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253.				
Cardiotonic					
Dermal	Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253.				
Emetic	Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253.				
Expectorant 0.3-0.6 ml/man	Martindale's 28th				
FLavor FEMA <1-1	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Irritant					
Pesticide					
Prostaglandin-Synthesis-Inhibitor IC50=57 uM	Alanko, J., et al. 1999. Modulation of Arachidonic Acid Metabolism by Phenols: Relation to their Structure and Antioxidant/Prooxidant Properties. <i>Free Radical Biol Med</i> , 26(1/2): 193-201.				
Transdermal	Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253.				

HEPTAN-2-ONE	Leaf	0.001	0.01		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
HEPTAN-3-OL	Leaf	0.5	5.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
HESPERETIN	Leaf	--	--	*	

**Activities (8)**

Antibacterial MIC=500 ug/ml					
Antifeedant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Antilipolytic	Kuppusamy, U.R., and Das, N.P. 1993. Antilipolytic Action of Hesperetin in Rat Adipocytes. <i>Planta Medica</i> , 59: 508.				
Antiviral	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Fungistat	Weidenborner, M., Hindorf, H., Jha, H.C., and Tsotsonos, P. 1989. Antifungal Activity of Flavonoids Against Storage Fungi of the Genus Aspergillus. <i>Phytochemistry</i> , 29(4): 1103-1105.				
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 253.				
Pesticide					

HEX-TRANS-2-ENOIC-ACID	Leaf	0.001	0.01		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
HISTIDINE	Leaf	750.0	3515.0	-0.93	USDA's Ag Handbook 8 and sequelae)

**Activities (7)**

Antiarteriosclerotic					
Antinephritic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Antioxidant					
Antiulcer					
Antiuremic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Oxidant					

HYDROXY-BOVOLIDE	Leaf	0.001	0.01		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
------------------	------	-------	------	--	--

HYMENOXIN	Leaf	--	--	*	
-----------	------	----	----	---	--

**ACTIVITIES (3)**

Aldose-Reductase-Inhibitor 10 uM	Okuda, I., Muwa, B., Inagakat, K., Horie, T., Nakayama, M. 1982. Inhibition of Aldose Reductases from Rat and Bovine Lenses by Flavonoids. Biochem Pharmacol, 31(23): 3807-3822.
Cancer-Preventive Mutagenic	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

**IRON**

Leaf 9.0 60.0 -0.77 \*

**Activities (6)**

Antiakathisic	Martindale's 29th
Antianemic	Martindale's 29th
Anticanker	
Anticheilitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antimennorrhaic 100 mg/day/wmn/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Prooxidant	

ISOAMYL-PHENYLACETATE Leaf 0.05 0.5 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

ISOBUTYRIC-ACID Leaf 0.03 0.3 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

**Activities (2)**

Irritant	
Transdermal	Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.

**ISOCHLOROGENIC-ACID**

Shoot -- -- \*

**Activities (4)**

Antioxidant	Phenolic Compounds in Food and Their Effects on Health, 64.
Antiseptic	J. Nat. Prod. 46(5).
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Pesticide	

ISOLEUCINE Leaf 1540.0 7215.0 -1.25 USDA's Ag Handbook 8 and sequelae)

**Activities (3)**

Antiencephalopathic?	Martindale's 29th
Antipellagric	Martindale's 28th
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

ISOMENTHOL Leaf 19.0 310.0 \*

**Activities (1)**

Antiacyetylcholinesterase IC29=1.2 mM

ISOMENTHOL-ACETATE Leaf 8.0 80.0 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

ISOMENTHONE Leaf 30.0 1000.0 -0.35 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

**Activities (3)**

Antiacyetylcholinesterase IC50=1.6 mM

Antioxidant	
Antiradicular	

ISOMENTHYL-ACETATE Plant -- 40.0 \*

ISOPULEGOL-ACETATE Leaf 0.01 0.1 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

ISORHOIFOLIN Leaf -- -- \*

ISOVALERALDEHYDE Plant -- -- \*

**Activities (1)**

FLavor FEMA 0.5-5 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

**Activities (5)**

Flavor FEMA 1-16	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Irritant	Zebowitz, T. C. Ed. 1989, Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Perfumery	Merck 11th Edition
Sedative	
Tranquilizer	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

ISOVALERIC-ACID-N-OCTYL-ESTER	Leaf	0.005	0.05	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
JASMONE	Essential Oil	--	--	*

**Activities (8)**

Antibacterial MIC=800-1,600 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. <i>J. Agric. Food Chem.</i> 41: 1102-1105.
Anticariogenic MIC=800-1,600 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. <i>J. Agric. Food Chem.</i> 41: 1102-1105.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Insectiphile	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	
Pesticide	
Trichomonicide LD100=200 ug/ml	

KILOCALORIES	Leaf	700.0	3280.0	0.42	*
LAVANDULOL	Leaf	0.001	0.01	-0.58	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
LEDOL	Plant	--	--		Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
LEUCINE	Leaf	2810.0	13160.0	-0.52	USDA's Ag Handbook 8 and sequelae)

**Activities (2)**

Antinecephalopathic	Martindale's 29th
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
LIMONENE	Leaf

LIMONENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
----------	------	----	----	--

**Activities (60)**

AChE-Inhibitor	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Acaricide LC100=8 uM	
Allelochemical	
Allergenic 1/20th carene	
Antiacetylcholinesterase IC22-26=1.2 mM	
Antiadrenomic	
Antialzheimeran?	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Antiasthmatic	
Antibacterial	Revista Italiana Eppos, 12: 5, 1994.
Anticancer	
Antiesophagitic	
Antifeedant	
Antiflu	Economic & Medicinal Plant Research, 5: 195.
Antiinflammatory	
Antilithic	
Antilymphomict	
Antimetastatic (Stomach)	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antiobesity	
Antiseptic	
Antispasmodic ED50=0.197 mg/ml	Fitoterapia No.59-1984.
Antitumor	

Antitumor (Colon)	
Antitumor (Pancreas)	
Antitumor (Prostate)	
Antitumor (Stomach)	
Antiviral	
Apoptotic	
Bronchoprotectant	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidstat	
Chemopreventive	
Cholesterolytic	
Detoxicant	
Enterococontractant	J. Aromatherapy 4: 22.
Expectorant	
FLavor	
Fungiphilic	J. Agric. Food Chem. 43: 2283.
Fungistat	
GST-Inducer	
Herbicide IC50=45 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Histaminic	
Immunomodulator	
Insecticide 0.37 uM/fly	
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Interleukin-6-Inhibitor	
Irritant	
Lipolytic	
Myorelaxant 50 mg/kg	
NO-Genic	
Nematicide IC=100 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet)	
Ozone-Scavenger	
P450-Inducer	
Peristaltic	
Pesticide	
Photosensitizer	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.
Sedative ED=1-32 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Transdermal	

LIMONENE Leaf 2.0 320.0 -0.11 \*

#### Activities (60)

AChE-Inhibitor	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Acaricide LC100=8 uM	
Allelochemic	
Allergenic 1/20th carene	
Antiacylcholinesterase IC22-26=1.2 mM	
Antiadenomic	
Antialzheimeran?	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Antiasthmatic	
Antibacterial	Revista Itiliana Eppos, 12: 5, 1994.
Anticancer	
Antiesophagitic	
Antifeedant	
Antiflu	Economic & Medicinal Plant Research, 5: 195.
Antiinflammatory	
Antilithic	
Antilymphomic	
Antimetastatic (Stomach)	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antiobesity	
Antiseptic	
Antispasmodic ED50=0.197 mg/ml	Fitoterapia No.59-1984.
Antitumor	

Antitumor (Colon)	
Antitumor (Pancreas)	
Antitumor (Prostate)	
Antitumor (Stomach)	
Antiviral	
Apoptotic	
Bronchoprotectant	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidstat	
Chemopreventive	
Cholesterolytic	
Detoxicant	
Enterococontractant	J. Aromatherapy 4: 22.
Expectorant	
FLavor	
Fungiphilic	J. Agric. Food Chem. 43: 2283.
Fungistat	
GST-Inducer	
Herbicide IC50=45 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Histaminic	
Immunomodulator	
Insecticide 0.37 uM/fly	
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Interleukin-6-Inhibitor	
Irritant	
Lipolytic	
Myorelaxant 50 mg/kg	
NO-Genic	
Nematicide IC=100 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet)	
Ozone-Scavenger	
P450-Inducer	
Peristaltic	
Pesticide	
Photosensitizer	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.
Sedative ED=1-32 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Transdermal	

LIMONENE-10-OL-ACETATE	Essential Oil	--	--	*	
LINALOL	Leaf	12.0	120.0	-0.37	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
LINALOOL	Leaf	12.0	120.0	-0.56	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

### Activities (53)

Acaricide C90=<15 ul/l (=<15 ppm)	
Allergenic	
Analgesic	
Anesthetic 0.01-1 ug/ml	
Antiacyetylcholinesterase	
Antiallergic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Antianaphylactic	
Antibacterial MIC=1,600 ug/ml	
Anticariogenic MIC=1,600 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.
Anticolic	
Anticonvulsant 200 mg/kg ipr mus	
Antiedemic	
Antiglutamaergic	
Antihistaminic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Antiinflammatory	
Antileukemic IC50=3.5-4.2 ug/ml	Chiang, L.C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.

ug/ml	31(1):37-46.
Antimange	
Antimite	
Antimutagenic	
Antiseptic 5 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antishock	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Antispasmodic	Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (Flores Graminis, Graminis Flos) used in Aromatherapy. <i>J. Ess. Oil Res.</i> , 2: 185-191, 1990.
Antiviral	
Barbituate-Synergist	
Bronchorelaxant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
CNS-Depressant	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidstat	
Carminative	
Culicide LC50=156-194 mg/l	
Cytotoxic	
Expectorant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
FLavor FEMA 2-40	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Acta Botanica Sinica, 32: 49.
GABA-nergic	
Hypnotic	
Hypothermic	
Insecticide LC50=156-194 mg/l	
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Larvicide LC50=156-194 mg/l	
Mosquitofuge > Deet	
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances, Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Merck 11th Edition
Pesticide	
Prooxidant	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
Sedative ED=1-32 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Sedative 200 mg/kg ipr mus (1% as active as diazepam)	
Termitifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Trichomonicide LD100=600 ug/ml	
Tumor-Promoter	

LINOLEIC-ACID Leaf 690.0 3230.0 -0.84 USDA's Ag Handbook 8 and sequelae)

### Activities (27)

5-Alpha-Reductase-Inhibitor	
AntiMS	Economic & Medicinal Plant Research, 6: 189.
Antiacne	
Antialopecic	
Antianaphylactic	Economic & Medicinal Plant Research, 6: 189.
Antiandrogenic	
Antiarteriosclerotic	
Antiarthritic	Economic & Medicinal Plant Research, 6: 189.
Anticoronal	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antieczemic	Economic & Medicinal Plant Research, 6: 189.
Antifibrinolytic	Economic & Medicinal Plant Research, 1: 53.
Antigranular	
Antihistaminic	Economic & Medicinal Plant Research, 6: 189.
Antiinflammatory IC50=31 uM	
Antileukotriene-D4 IC50=31 uM	
Antimenorrhagic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiprostatic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	Science News, 146: 421.
Comedolytic	
Hepatoprotective	

Immunomodulator	Economic & Medicinal Plant Research, 6: 189.				
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Metastatic	Science News, 146: 421.				
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.				
Propecic					
LINOLENIC-ACID	Leaf	4350.0	20375.0	-0.26	USDA's Ag Handbook 8 and sequelae)
LITHOSPERMIC-ACID	Shoot	--	--	*	
<b>Activities (3)</b>					
Antigonadotropic	Jim Duke's personal files.				
Antithyroid	Jim Duke's personal files.				
Cardiotonic					
LUTEOLIN	Leaf	--	--	*	
<b>Activities (78)</b>					
Aldose-Reductase-Inhibitor EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. Fitoterapia 64(2): 130, 1993.				
Aldose-Reductase-Inhibitor IC50=0.45 uM rat					
AntiHIV					
Antiallergic					
Antiangiogenic IC60-75=10 uM					
Antiatherogenic					
Antibacterial MIC=500 ug/ml	Planta Medica, 57: A43, 1991.				
Anticarcinogenic					
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Anticataract EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. Fitoterapia 64(2): 130, 1993.				
Anticomplementary					
Antidermotic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.				
Antiestrogenic					
Antifeedant IC52=<1,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.				
Antiherpetic 11-23 ug/ml					
Antihistaminic <10-15 uM					
Antiinflammatory #NAME?	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.				
Antileukemic 20-50 uM					
Antilymphomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Antimelanomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Antimutagenic ID50=2-5 nM					
Antimutagenic ID50=0.44 ug/ml					
Antinociceptive					
Antioxidant IC50=10 uM	Economic & Medicinal Plant Research, 5: 197.				
Antipolio					
Antiproliferant					
Antispasmodic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.				
Antitumor 1-50 uM					
Antitumor (Colon)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Antitumor (Kidney)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Antitumor (Lung)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Antitumor (Pancreas)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Antitumor (Skin) 20 uM					
Antitumor (Stomach)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Antitumor (Thyroid) 12-50 uM					
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.				
Antitussive					
Antiviral 11-23 ug/ml					

Apoptotic 12-50 uM	
Aromatase-Inhibitor IC50=1 uM/l	Journal of Medicinal Food 2: 235.1999.
Beta-Glucuronidase-Inhibitor IC50=~40 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	
Chemopreventive	
Choleretic	
Cytotoxic 1-50 uM	
Deiodinase-Inhibitor	Jim Duke's personal files.
Differentiator IC>40=40 uM	
Diuretic	Jim Duke's personal files.
Estrogenic 58% genistein	
Hepatoprotective	
Hyaluronidase-Inhibitor IC50+=100-250 uM	
Hypocholesterolemic	
ICAM-1-Inhibitor	
IKK-Inhibitor	
Iodothyronine-Deiodinase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Lipoxygenase-Inhibitor	
MAPK-Inhibitor	
MMP-9-Inhibitor 20 uM	
Metalloproteinase-Inhibitor	
Myorelaxant	
NEP-Inhibitor IC50=>42 uM	
NF-kB-Inhibitor	
NO-Inhibitor	
PTK-Inhibitor 10-100 uM	
Pesticide	
Proliferant	
Prostaglandin-Synthetase-Inhibitor	
Protein-Kinase-C-Inhibitor IC70=50 uM	
Succinoxidase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
TNF-alpha-Inhibitor IC50=14.44 uM	
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. Toxicol Ind Health, 14: 223-237.
VEGF-Inhibitor IC50=2-7 uM	
Vasodilator	
Xanthine-Oxidase-Inhibitor IC50=0.11 ug/ml	Chem. & Pharm. Bull. 38: 1772.
INOS-Inhibitor	

LUTEOLIN-7-O-RUTINOSIDE	Leaf	--	120.0	*	
LYSINE	Leaf	1610.0	7540.0	-1.21	USDA's Ag Handbook 8 and sequelae)

#### Activities (4)

Antialkalotic	Martindale's 29th
Antiherpetic 0.5-3 g/day	
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hypoarginanemic 250 mg/kg	Martindale's 29th

MAGNESIUM	Leaf	985.0	6610.0	0.96	*
-----------	------	-------	--------	------	---

#### Activities (65)

AntiCFS	
AntiLyme 400-1,000 mg	
AntiMS	
AntiPMS 400-800 mg/day/wmn/orl	
AntiPMS 400-800 mg/day/wmn orl	
AntiRaynaud's 280-350 mg/day	

Antialcoholic	
Antiangular 400 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antianorectic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antianxiety 400 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiarrhythmic 400 mg/day	
Antiarthritic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiasthmatic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiatherosclerotic 400 mg/day	
Anticephalagia	
Anticlimacteric 500-750 mg/day	Facciola, S. 1998. <i>Cornucopia - A Source Book of Edible Plants</i> . Kampong Publications, Vista CA. 713 pp.
Anticonvulsant	
Anticoronal 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antidepressant	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidiabetic 400-800 mg/man/day	
Antidysmenorrheic 100 mg 4 x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiendometriotic 500 mg/day	
Antienteric	
Antiepileptic 450 mg/day	
Antifatigue	
Antifibromyalgic 200-300 mg 3x/day	
Antigastrotic	
Antiglaucomic	
Antihyperkinetic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antihypertensive	
Antihypoglycemic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiinflammatory 100 mg 4 x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiinsomniac	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antilithic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimastalgic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimenopausal 500-750 mg/day	
Antimigraine 200 mg/day/man	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antimiral-valve-prolapso	
Antinephrolytic	
Antineurotic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antosteoporotic 500-1,000 mg/day/wmn/orl	
Antiplaque 500-1,000 mg/day	
Antiretinopathic 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antispasmodic	
Antispasmophilic 500 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antistress 500-750 mg/day	
Antistroke 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antisyndrome-X 400 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Anxiolytic 500-750 mg/day	
CNS-Depressant	Facciola, S. 1998. <i>Cornucopia - A Source Book of Edible Plants</i> . Kampong Publications, Vista CA. 713 pp.
Calcium-Antagonist	
Cardioprotective	
Diuretic	
Hypocholesterolemic 400 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Hypotensive 260-500 mg/day	
Immunomodulator	
Insulinogenic 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Laxative 300-500 mg/day	
Litholytic	
Myorelaxant 100 mg 4 x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Neurotransmitter	
Tranquilizer 500-750 mg/day	
Uterorelaxant 100 mg 4 x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Vasodilator	

#### Activities (14)

AntiPMS					
Antialcoholic	Forest H. Nielsen, USDA, Grand Forks, various publications.				
Antianemic	Martindale's 28th				
Antiarthritic					
Antidiabetic 3-5 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antidiabetic 10-30 mg/man/day					
Antidiscotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antidyskinetic	Martindale's 28th				
Antiepileptic 450 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antiosteoporotic					
Antiototic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antioxidant					
Antisyndrome-X 10-30 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95				
Hypoglycemic 10-30 mg/man/day					

#### MENTHACUBANONE

Shoot -- -- \*

#### MENTHOCUBANONE

Shoot -- -- \*

#### MENTHOFURAN

Plant -- 2800.0 -0.21 \*

#### Activities (5)

Calcium-Antagonist IC50=441 uM gpg (weak activity)

Hepatotoxic Lawrence Review of Natural Products, Jan-92.

Nematicide MLC=1 mg/ml

Shoyakugaku Zasshi, 44: 183.

Pesticide

Pulmonotoxic

De Smet, P.A.G.M., Keller, K., Hansel, R. and Chandler, R.F., eds. 1993. Adverse Effects of Herbal Drugs 2. Springer-Verlag, Berlin. 348pp.

#### MENTHOFURAN

Ay -- 2200.0 \*

#### Activities (5)

Calcium-Antagonist IC50=441 uM gpg (weak activity)

Hepatotoxic Lawrence Review of Natural Products, Jan-92.

Nematicide MLC=1 mg/ml

Shoyakugaku Zasshi, 44: 183.

Pesticide

Pulmonotoxic

De Smet, P.A.G.M., Keller, K., Hansel, R. and Chandler, R.F., eds. 1993. Adverse Effects of Herbal Drugs 2. Springer-Verlag, Berlin. 348pp.

#### MENTHOKUBANONE

Shoot -- -- \*

#### MENTHOL

Leaf 156.0 20000.0 1.71 \*

#### Activities (63)

Allergenic Martindale's 29th

Analgesic Martindale's 28th

Anesthetic 2,000 ppm Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. *J. Pharm. Pharmacol.* 46: 14-18, 1994.

Antiacetylcholinesterase IC50=2.0 mM

Antiaggregate IC50=750

Antiallergic *J. Food Hyg. Soc. Jap.* 33(6): 569.

Antiasthmatic Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingston, Edinburgh.

Antibacillus MIC=1.25 mg/ml

Antibacterial MIC=0.625-2.5

Antibronchitic Martindale's 28th

Antidandruff A.L.L. Hunting. Encyclopedia of Shampoo Ingredients. Micelle Press, Cranford NJ. 467 pp.

Antiescherichic MIC=1.25 mg/ml

Antihalitosis American Health, 12(4): 17, 1993.

Antihistaminic *J. Food Hyg. Soc. Jap.* 33(6): 569.

Antiinflammatory Martindale's 28th

Antilisteria MIC=0.625 mg/ml

Antineuralgic

Antipruritic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Antipyretic	
Antirheumatic	Martindale's 28th
Antisalmonella MIC=0.625 mg/ml	
Antiseptic 4 x phenol	Wagner & Wolff, eds. 1977. <i>New Natural Products (RS164. I56. 176)</i>
Antisinusitic	Martindale's 28th
Antispasmodic ED50=0.01 mg/ml	Fitoterapia No.59-1984.
Antistaphylococcal MIC=0.625 mg/ml	
Antistreptococcal MIC=0.4 mg/ml	
Antitartrar	
Antivaginitic	
Antivulvitic	
Bradycardic 65 mg/3 x day/woman	Martindale's 28th
Bronchomucolytic	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.
Bronchomucotropic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Bronchorheic	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.
CNS-Depressant	
CNS-Stimulant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Calcium-Antagonist	
Candidicide MIC=0.625 mg/ml	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Choleretic	
Ciliotoxic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Congestant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Convulsant	R.J. Huxtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficial Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
Counterirritant	
Decongestant? 11 mg/man	Eccles, R., et al. 1989. The effects of oral administration of (-)-menthol on nasal resistance to airflow and nasal sensation of airflow in subjects suffering from nasal congestion associated with the common cold. <i>J. Pharm. Pharmacol.</i> 42: 652-654, 1990.
Dermatitogenic	
Diaphoretic	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Enterorelaxant	J. Aromatherapy 4: 22.
Expectorant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Gastrosedative	Merck 11th Edition
Irritant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Myorelaxant	Martindale's 29th
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Neurodepressant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Neuropathogenic 40-100 mg/day/rat	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Nociceptive	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Perfumery	Merck 11th Edition
Pesticide	
Refrigerant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Rubefacient	
Termitecide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Transdermal	
Vibriocide	

MENTHONE Plant 20.0 10000.0 1.12 \*

#### Activities (30)

- Acaricide
- Allelopathic
- Analgesic
- Antiacetylcholinesterase  
IC50=1.4 mM
- Antiaggregant IC50=750
- Antiallergic J. Food Hyg. Soc. Jap. 33(6): 569.

mg/ml	
Antibacterial MIC=0.625-5 mg/ml	
Antiescherichic MIC=5 mg/ml	
Antihistaminic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antilisteria MIC=1.25 mg/ml	
Antisalmonella MIC=5 mg/ml	
Antiseptic 2.25 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antispasmodic ED50=0.044 mg/ml	Fitoterapia No.59-1984.
Antistaphylococic MIC=0.625-2.5 mg/ml	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide MIC=2.5 mg/ml	
Cerebrotoxic orl man	J. Aromatherapy 4: 24.
Culicide LC50=156-194 mg/l	
FLavor FEMA 5-50	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Insecticide LC50=156-194 mg/l	
Larvicide LC50=156-194 mg/l	
Mutagenic	
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Psychoactive	
Sedative	Ortiz de Urbina, A.V., Martin*, M.L., Montero, M.J., Moran, A., and San Roman, L. 1988. Sedating and Antipyretic Activity of the Essential Oil of Calamintha sylvatica subsp. Ascendens. Journal of Ethnopharmacology, 25: 165-171, 1989.
Trichomonicide LD100=600 ug/ml	

MENTHOSIDE	Leaf	--	--	*
MENTHYL-ACETATE	Leaf	8.0	5080.0	1.0

#### Activities (2)

Antispasmodic ED50=0.105 mg/ml	Fitoterapia No.59-1984.
Perfumery	Merck 11th Edition

MENTHYL-ISOVALERATE	Leaf	0.01	0.1	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
---------------------	------	------	-----	--

#### Activities (1)

Sedative	Merck 11th Edition
----------	--------------------

#### Activities (15)

Anticataract	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antidote (Acetaminophen) 10 g/16hr/man/orl	Martindale's 29th
Antidote (Paracetamol) 10 g/16hr/man/orl	Martindale's 29th
Antieczemic	
Antihepatotic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antioxidant	
Antiparkinsonian 1-5 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Emetic	Martindale's 29th
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Glutathionigenic	Martindale's 29th
Hepatoprotective	
Lipotropic	Merck 11th Edition
Urine-Acidifier 200 mg/3x/day/man/orl	Martindale's 28th

MINTLACTONE	Leaf	0.3	3.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
MUFA	Leaf	330.0	1545.0	-0.58	USDA's Ag Handbook 8 and sequelae)
<b>Activities (13)</b>					
Allergenic					
Anemigenic					
Antiinflammatory					
IC50=21 uM					
Antileukotriene-D4					
IC50=21 uM					
Cancer-Preventive					Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Choleretic 5 ml/man					
Dermatitogenic					
FLavor FEMA 1-30					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Hypocholesterolemic					Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Insectifuge					Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant					Merck 11th Edition
Percutaneostimulant					Seki, T., Toeda, C., Kawaguchi, T., Junii, K., Sugabayashi, K., and Morimoto, Y. 1990. Enhanced Transdermal Delivery of Zidovudine in Rats and Human Skin. Chem. Pharm. Bull. 38(11): 3086-3089, 1990.
Perfumery					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
MYRCENE	Leaf	1.0	10.0	-0.17	*
<b>Activities (22)</b>					
ACE-Inhibitor 100 ug/ml					
Aldose-Reductase-Inhibitor 100 ug/ml					Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.
Allergenic					
Analgesic					Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991.
Antibacterial					
Anticonvulsant					
Antimutagenic					Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991.
Antinitrosaminic					
Antinociceptive 10-20 mg/kg ipr mus					Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990.
Antinociceptive 20-40 mg/kg scu mus					Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990.
Antioxidant					Jim Duke's personal files.
Antispasmodic					Jim Duke's personal files.
Chemopreventive					Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
FLavor FEMA 0.5-9					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide					Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Hypothermic					
Insectifuge					
Irritant					Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Myorelaxant 100-200 mg/kg					
P450-2B1-Inhibitor IC50=0.14 uM					
Perfumery					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide					
MYRISTIC-ACID	Leaf	60.0	280.0	-0.55	USDA's Ag Handbook 8 and sequelae)
<b>Activities (6)</b>					
Antioxidant IC71=60					
Cancer-Preventive					Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cosmetic					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hypercholesterolemic					Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Lubricant					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Nematicide					Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
MYRTENAL	Leaf	0.002	0.02	-0.66	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Antimalarial IC50=5-50 ug/ml	Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.
Antiplasmodial IC50=5-50 ug/ml	Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.
Herbicide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	

MYRTENOL	Leaf	0.5	5.0	-0.41	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
----------	------	-----	-----	-------	--

#### Activities (2)

Antimalarial IC50=5-50 ug/ml	Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.
Antiplasmodial IC50=5-50 ug/ml	Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.

NEO-ISOPULEGOL	Essential Oil	--	--	*	
----------------	---------------	----	----	---	--

NEOISOMENTHOL-ACETATE	Essential Oil	--	--	*	
-----------------------	---------------	----	----	---	--

NEOMENTHOL	Leaf	33.0	820.0	-0.55	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
------------	------	------	-------	-------	--

#### Activities (2)

Antispasmodic ED50=0.033 mg/ml	Fitoterapia No.59-1984.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

NEOMENTHONE	Leaf	70.0	700.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
-------------	------	------	-------	--	--

NEOMENTHYL-ACETATE	Leaf	15.0	150.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
--------------------	------	------	-------	--	--

NERAL	Leaf	0.001	0.01	-0.39	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
-------	------	-------	------	-------	--

#### Activities (4)

Antibacterial	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
Antispasmodic	
Pesticide	
Termiticide LD100=5 mg/g	

NEROL	Tissue Culture	--	--	*	
-------	----------------	----	----	---	--

#### Activities (10)

Antibacterial	HerbalGram No. 17.
Antihelicobacter	
Antiseptic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiulcer	
Estrogenic	
FLavor FEMA 1-20	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Perfumery	Merck 11th Edition
Pesticide	
Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Trichomonicide ED100=300 ug/ml	

NEROLIDOL	Leaf	0.05	0.5	-0.72	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
-----------	------	------	-----	-------	--

#### Activities (11)

Aldose-Reductase-Inhibitor	
Allergenic	
Antiacne	
Antibacterial MIC=25-200 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.
Anticariogenic MIC=25-200 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.
Antifeedant 1 mM (diet)	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

FLavor FEMA 1-10	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry	
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry	
Pesticide		
NEVADENSIN	Leaf -- -- *	
<b>Activities (6)</b>		
Aldose-Reductase-Inhibitor 10 uM	Okuda, I., Muwa, B., Inagakat, K., Horie, T., Nakayama, M. 1982. Inhibition of Aldose Reductases from Rat and Bovine Lenses by Flavonoids. <i>Biochem Pharmacol</i> , 31(23): 3807-3822.	
Antiinflammatory 75 mg/kg	Fitoterapia No.5-1990.	
Antitubercular 0.2 mg/ml	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.	
Antitussive	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.	
Expectorant		
Pesticide		
NIACIN	Leaf 17.0 114.0 0.2 *	
<b>Activities (39)</b>		
Allergenic	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.	
AntiLyme 50 mg/day		
AntiMeniere's	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
AntiRaynaud's 1,500-4,000 mg/day		
Antiacrodynic		
Antiallergic 50 mg/2x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.	
Antialzheimeran		
Antiambyopic		
Antianginal		
Anticataract		
Antichilblain	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.	
Anticonvulsant 3 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.	
Antidementia		
Antidermatitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.	
Antidiabetic		
Antidysphagic		
Antiepileptic 3 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.	
Antihangover 50 mg		
Antihistaminic 50 mg 2x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.	
Antihyperactivity 1.5-6 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.	
Antiinsomnic 1 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.	
Antineuralgic		
Antiparkinsonian 100 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.	
Antipellagric	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.	
Antiscotomic		
Antispasmodic 100 mg 2x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.	
Antivertigo		
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.	
Cardioprotective		
Circulotonic		
Fibrinolytic		
Hepatoprotective		
Hepatotoxic		
Hypocholesterolemic 50-100 mg 3x/day		
Hypoglycemic		
Hypolipidemic		
Sedative	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).	
Serotonergic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).	
Vasodilator	Martindale's 29th	
NONAN-1-OL	Leaf 0.001 0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
O-CRESOL	Leaf 0.001 0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Allelochemical IC50=0.36 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antiseptic	Merck 11th Edition
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Pesticide	
Rodenticide LD 50=620 cut rat	

OCIMENE	Essential Oil	--	--	*
---------	---------------	----	----	---

#### Activities (2)

Insecticide	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

OCT-TRANS-2-EN-OL	Leaf	0.001	0.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.	
OCTAN-3-OL	Leaf	4.0	70.0	-0.44	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
OLEIC-ACID	Leaf	290.0	1360.0	-0.48	USDA's Ag Handbook 8 and sequelae

#### Activities (18)

5-Alpha-Reductase-Inhibitor	
Allergenic	
Alpha-Reductase-Inhibitor	
Anemiogenic	
Antialope cic	
Antiandrogenic	
Antiinflammatory	
IC50=21 uM	
Antileukotriene-D4	
IC50=21 uM	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Choleretic 5 ml/man	
Dermatitogenic	
FLavor FEMA 1-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	Merck 11th Edition
Percutaneostimulant	Seki, T., Toeda, C., Kawaguchi, T., Juni, K., Sugabayashi, K., and Morimoto, Y. 1990. Enhanced Transdermal Delivery of Zidovudine in Rats and Human Skin. Chem. Pharm. Bull. 38(11): 3086-3089, 1990.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Propecic	

P-COUMARIC-ACID	Shoot	--	--	*
-----------------	-------	----	----	---

#### Activities (25)

Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. Sankyo Kenkyusho Nempo, 43: 99-110.
Allelopathic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antibacterial	Pharmazie, 46: 156, 1991.
Anticlastogen	
Antifertility	
Antihepatotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antinitrosaminic	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Antioxidant IC24=30 ppm	
Antioxidant 1/3 BHA	
Antiperoxidant IC50=>100 uM	Planta Medica, 57: A54, 1991.
Antiseptic	
Antispasmodic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antitumor	
Cancer-Preventive	
Chemopreventive	
Choleretic	

					LONDON. 791 pp.
Diaphoretic?					Lawrence Review of Natural Products, Dec-90.
Fungicide					Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Lipoxygenase-Inhibitor IC11=5 mM					Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690.
Pesticide					
Prostaglandigenic					
Prostaglandin-Synthesis-Inhibitor					
Tyrosinase-Inhibitor ID50=3,650 uM					
P-CRESOL	Leaf	0.002	0.02		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<b>Activities (8)</b>					
Allelochemical IC50=1.13 mM					Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antimutagenic					Economic & Medicinal Plant Research, 6: 235.
Antiseptic					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Cancer-Preventive					Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
FLavor FEMA <1					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Parasiticide					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide					
Rodenticide LD50=1,100 cut rat					
P-CYMENE	Leaf	2.5	30.0	-0.38	*
<b>Activities (16)</b>					
Analgesic					Martindale's 28th
Antiacetylcholinesterase IC40=1.2 mM					
Antibacillary					
Antibacterial					
Antiflu					
Antirheumatalgic					Martindale's 28th
Antiviral					
FLavor FEMA 12-250					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide					Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Herbicide IC50=50 uM					Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Insectifuge					Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.
Irritant					Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Laxative					Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Pesticide					
Sedative					Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Trichomonicide LD100=50 ug/ml					
P-CYMOL	Leaf	4.0	130.0	-0.49	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
P-MENTH-TRANS-2-EN-1-OL	Essential Oil	--	--		*
P-MENTHANE	Essential Oil	--	--		*
P-METHOXY-ACETOPHENONE	Leaf	0.01	0.1		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
PALMITIC-ACID	Leaf	1760.0	8245.0	-0.23	USDA's Ag Handbook 8 and sequelae)
<b>Activities (13)</b>					
5-Alpha-Reductase-Inhibitor					
Antialopelcic					
Antiandrogenic					
Antifibrinolytic					Economic & Medicinal Plant Research, 1: 53.
Antioxidant IC40=60					
FLavor FEMA 1					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Hypercholesterolemic Lubricant	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.) Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Pesticide	
Propeptic	
Soap	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

PALMITOLEIC-ACID Leaf 20.0 95.0 -0.57 USDA's Ag Handbook 8 and sequelae

#### Activities (2)

5-Alpha-Reductase-Inhibitor	
Soap	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

PANTOTHENIC-ACID Leaf 3.0 16.0 -0.54 USDA's Ag Handbook 8 and sequelae

#### Activities (11)

Antiallergic 100-500 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiarthritic 500-2,000 mg/day	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Anticephalagic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Anticlaudificant?	Martindale's 29th
Antidermatitic	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
Antifatigue	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antihypercholesterolemic 300 mg/meal	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antihielus?	Martindale's 29th
Antiinsomniac?	Martindale's 29th
Antirheumatitic?	Martindale's 29th
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

PECTIN Shoot -- 30000.0 -1.0 \*

#### Activities (24)

Antiatheromic 15 g/man/day	Cerda, J.J. Pectin in Health and Disease. HortScience, 25(12): 1485, 1990.
Antibacterial	
Antidiabetic 10 g/man/day/orl	
Antidiarrheic	Merck 11th Edition
Antienteric	
Antigallstone	
Antigastritic	
Antilithic	
Antimetastatic	
Antimutagenic	
Antiobesity	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Antitumor (Colon)	
Antitumor (Prostate)	
Antitusive	
Antiulcer	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Chemopreventive	
Demulcent	
Fungicide	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Hemostat	
Hypocholesterolemic	
Hypoglycemic	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Peristaltic	
Pesticide	

PENT-CIS-2-EN-1-OL Leaf 0.5 5.0 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

PENTAL-1-OL Essential Oil -- -- \*

PERILLYA-ALCOHOL Leaf 0.05 0.5 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

**Activities (14)**

Antibacterial  
 Anticancer (Pancreas) IC50=290 uM  
 Antimelanomic IC50=250 uM/l  
 Antiproliferant  
 Antitumor (Breast)  
 Antitumor (Colon)  
 Antitumor (Pancreas)  
 Antitumor (Prostate)  
 Apoptotic  
 Candidicide  
 Chemopreventive  
 Fungicide  
 Nematicide MLC=1 mg/ml  
 Pesticide

Shoyakugaku Zasshi, 44: 183.

PHELLANDRENE	Leaf	2.0	20.0	-0.76	*
--------------	------	-----	------	-------	---

**Activities (4)**

Hyperthermic  
 Irritant  
 Spasmogenic  
 Tumor-Promoter

HerbalGram No. 22 - Spring 1990, page 45.  
 Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.  
 Fitoterapia No.59-1984.

PHENYLACETIC-ACID	Leaf	0.001	0.01	-1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
-------------------	------	-------	------	------	--

**Activities (2)**

FLavor FEMA 0.1-30  
 Perfumery

Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  
 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

PHENYLALANINE	Leaf	1910.0	8945.0	-0.34	USDA's Ag Handbook 8 and sequelae)
---------------	------	--------	--------	-------	------------------------------------

**Activities (7)**

AntiADD 587 mg/day/orl  
 Antidepressant 50-4,000 mg/day/man  
 Antiparkinsonian 200-500 mg/day/man  
 Antisickling 690 ug/ml  
 Antivitiligin 100 mg/kg/day/orl/man  
 Monoamine-Precursor  
 Tremorigenic 1,600-12,600 mg/man/day

Martindale's 29th  
 Martindale's 28th  
 Martindale's 29th  
 Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).  
 Martindale's 28th

PHOSPHORUS	Leaf	1150.0	7720.0	0.51	*
------------	------	--------	--------	------	---

**Activities (4)**

Antiosteoporotic  
 Anxiolytic  
 Immunostimulant  
 Osteogenic

Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  
 Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  
 Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

PHYTOL	Leaf	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.	
--------	------	----	----	---	--

**Activities (1)**

Cancer-Preventive

Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

PHYTOSTEROLS	Leaf	130.0	610.0	-0.63	USDA's Ag Handbook 8 and sequelae)
--------------	------	-------	-------	-------	------------------------------------

**Activities (2)**

Antiprostatotic  
 Hypocholesterolemic

PINENE	Leaf	2.0	23.0	-1.01	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
--------	------	-----	------	-------	--



PULEGONE	Leaf	3.0	4000.0	-0.17	*
<b>Activities (28)</b>					
AChE-Inhibitor	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. &amp; Physiol.</i> , 23, 1985, 383-8.				
Antiacetylcholinesterase IC50=0.9 mM					
Antiacetylcholinesterase IC50=136 ug/ml					
Antialzheimeran?	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. &amp; Physiol.</i> , 23, 1985, 383-8.				
Antibacterial	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.				
Anticholinesterase	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. &amp; Physiol.</i> , 23, 1985, 383-8.				
Antihistaminic	Ortiz De Urbina, A.V., Martin, M.L., Montero, M.J., Carron, R., Sevilla, M.A., San Roman, L. 1989. Antihistaminic activity of pulegone on the guinea-pig ileum. <i>J. Pharm. Pharmacol.</i> 42: 295-296, 1990.				
Antipyretic					
Avifuge					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Candidicide	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.				
Cerebrotoxic orl man	J. Aromatherapy 4: 24.				
Encephalopathic 80 mg/kg orl rat	Lawrence Review of Natural Products, Jan-92.				
FLavor FEMA 5-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Fungicide	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.				
Glutathionalytic	Lawrence Review of Natural Products, Jan-92.				
Hallucinogenic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benfient Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.				
Hepatotoxic	Lewis, E.J. and Friedrich, E.C. 1989. The Essential Oil of Poliomintha incana. <i>Planta Medica</i> 56(2): 224-226, 1990.				
Herbicide IC50=1.5 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.				
Insecticide	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. &amp; Physiol.</i> , 23, 1985, 383-8.				
Insectifuge					
Nephrotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benfient Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.				
Neurotoxic					
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Pesticide					
Pulifuge					
Pulmonotoxic					
Sedative					
PYRIDINE	Leaf	--	0.001		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<b>Activities (3)</b>					
CNS-Depressant					Merck 11th Edition
FLavor FEMA 0.02					
Irritant					Merck 11th Edition
RIBOFLAVIN	Leaf	6.0	38.9	0.0	*
<b>Activities (15)</b>					
AntiLyme 50 mg/day					
Antiarabiflavinotic 2-10 mg/day orl	Martindale's 28th				
Anticarpal-Tunnel 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Anticataract 15 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Anticephalic					
Anticervicaldysplastic 1.6-10 mg/day					
Anticheilitic					
Antidecubitac					
Antiglossitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antikeratitic					
Antimigraine					
Antioxidant					
Antipellagric					
Antiphotophobic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
ROSMARINIC-ACID	Shoot	700.0	1800.0	-0.77	*

ABeta-Inhibitor	
Adenylate-Cyclase-Inhibitor	
Aldose-Reductase-Inhibitor	
AntiHIV EC50=40 ug/ml	
Antiaggregant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiallergic	
Antialzheimeran	
Antianaphylactic 1-100 mg/kg orl	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antianaphylactic ID50=1 mg/kg ivn rat	
Antianaphylactic ID50=10 mg/kg ims rat	
Antatherosclerotic IC50=0.74 uM	
Antibacterial	Planta Medica, 55: 663.
Anticoagulant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anticomplementary 1/2 aspirin	
Anticomplementary 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antidepressant	
Antiedemic 0.316-3.16 mg/kg ims	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antigonadotropic	
Antihemolytic IC70=5-10 um/l	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antihepatotoxic	
Antiherpetic 50 ug/ml	Vlietinck, A.J. and Domisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.
Antiherpetic EC50=20 ug/ml	
Antihyperthyroid	
Antiinflammatory IC~58=1,000 uM	
Antiintegrase 10 ug/ml	
Antileukotriene	
Antilipoperoxidant	
Antimutagenic	
Antinephritic	
Antioxidant EC50=2.7 ug/ml	Parveen, N. 1991. Antifilarial Activity of Vitex negundo Against Setaria cervi. Fitoterapia, 62(2): 163, 1991.
Antioxidant 10 uM	
Antioxidant (LDL) IC50=0.74 uM	
Antiplaque	
Antiproliferant	
Antiprostaglandin 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antiproteolytic IC50=0.9 mol/l	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Antipulmonotic	Tyler, V.E.. 1994.
Antiradicular	
Antishock	Int. J. Immunopharmacology. Vol 10: 735, 1988.
Antithyreotropic	
Antithyroid	Jim Duke's personal files.
Antiuremic	
Antiviral EC50=40 ug/ml	
Anxiolytic	
Apoptotic	
COX-1-Inhibitor IC58=1,000 uM	
COX-2-Inhibitor IC>58=1,000 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cytotoxic TC50=100-150 ug/ml	
Deiodinase-Inhibitor	Jim Duke's personal files.
Immunomodulator	
Immunostimulant	
Lipoxygenase-Inhibitor	
Neuroprotective	
Pesticide	
Radioprotective	

**Activities (57)**

ABeta-Inhibitor	
Adenylate-Cyclase-Inhibitor	
Aldose-Reductase-Inhibitor	
AntiHIV EC50=40 ug/ml	
Antiaggregant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiallergic	
Antialzheimeran	
Antianaphylactic 1-100 mg/kg orl	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antianaphylactic ID50=1 mg/kg ivn rat	
Antianaphylactic ID50=10 mg/kg ims rat	
Antitherosclerotic IC50=0.74 uM	
Antibacterial	Planta Medica, 55: 663.
Anticoagulant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anticomplementary 1/2 aspirin	
Anticomplementary 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antidepressant	
Antiedemic 0.316-3.16 mg/kg ims	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antigonadotropic	
Antihemolytic IC70=5-10 um/l	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antihepatotoxic	
Antiherpetic 50 ug/ml	Vlietinck, A.J. and Domisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.
Antiherpetic EC50=20 ug/ml	
Antihyperthyroid	
Antiinflammatory IC~58=1,000 uM	
Antiintegrase 10 ug/ml	
Antileukotriene	
Antilipoperoxidant	
Antimutagenic	
Antinephritic	
Antioxidant EC50=2.7 ug/ml	Parveen, N. 1991. Antifilarial Activity of Vitex negundo Against Setaria cervi. Fitoterapia, 62(2): 163, 1991.
Antioxidant 10 uM	
Antioxidant (LDL) IC50=0.74 uM	
Antiplaque	
Antiproliferant	
Antiprostaglandin 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antiproteolytic IC50=0.9 mol/l	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Antipulmonotic	Tyler, V.E.. 1994.
Antiradicular	
Antishock	Int. J. Immunopharmacology. Vol 10: 735, 1988.
Antithyreotropic	
Antithyroid	Jim Duke's personal files.
Antiuremic	
Antiviral EC50=40 ug/ml	
Anxiolytic	
Apoptotic	
COX-1-Inhibitor IC58=1,000 uM	
COX-2-Inhibitor IC>58=1,000 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cytotoxic TC50=100-150 ug/ml	
Deiodinase-Inhibitor	Jim Duke's personal files.
Immunomodulator	
Immunostimulant	
Lipoxygenase-Inhibitor	
Neuroprotective	

RUTIN	Plant	--	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
<b>Activities (87)</b>			
5-HT-Inhibitor			
Aldehyde-Oxidase-Inhibitor IC27-52=10 uM			
Aldose-Reductase-Inhibitor 100 uM			
Aldose-Reductase-Inhibitor 4 ug/ml	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.		
Allelochemical			
AntiCVI 270 mg/man/day			
Antiaggregant ED50=33 nmol/kg iv			
Antiallergic			
Antiapoplectic			
Antiatherogenic			
Antiatherosclerotic			
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.		
Anticancer			
Anticapillary-Fragility 20-100 mg orl'man	Merck 7th Ed.		
Anticataract			
Anticlastogen			
Anticonvulsant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.		
Antidementia	Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.		
Antidermatitic	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.		
Antidiabetic	Jin, G-Z., Yamagata, Y., and Tomita, K.-i. 1989. Structure of Rutin Pentamethanol. <i>Chem. Pharm. Bull.</i> 38(2): 297-300, 1990.		
Antiedemic 270 mg/day orl man			
Antierythemic			
Antifeedant			
Antiglaucomic 60 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.		
Antihematuric			
Antihemorrhoidal			
Antihepatotoxic	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.		
Antiherpetic	Economic & Medicinal Plant Research, 5: 198.		
Antihistaminic			
Antihypertensive	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.		
Antiinflammatory 20 mg/kg			
Antimalarial IC50=>100 ug/ml	Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using <i>Plasmodium falciparum</i> *. <i>Journal of Ethnopharmacology</i> , 15: 201-209, 1986.		
Antimelanomic			
Antimetastatic			
Antimutagenic ID50=2-5 nM			
Antinephritic			
Antinociceptive			
Antioxidant IC28=30 ppm			
Antioxidant IC50=120 uM			
Antioxidant IC54=10 uM			
Antiperioxidant IC50=10-20 uM			
Antiplatelet			
Antiproliferant 50-75 uM/l			
Antiprotozoal			
Antipurpuric			
Antiradicular 9 x quercetin			
Antispasmodic			
Antisunburn			
Antithrombogenic EC50=500 nM			
Antithyroid IC50=68 uM			
Antitrypanosomic 100 mg/kg	Planta Medica, 57: A44, 1991.		
Antitumor			
Antitumor-Promoter			

Antivaricose	
Antiviral	
Apoptotic 75 uM/l	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Capillariprotective	Merck 11th Edition
Catabolic	
Chemopreventive	
Cytoprotective IC50=3 uM	
Estrogenic?	Economic & Medicinal Plant Research, 6: 189.
Hemostat	
Hepatomagenic 20,000 ppm (diet) rat	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507 ACS, Washington 402 pp.
Hepatoprotective 20 mg/kg rat	
Hypocholesterolemic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Hypotensive	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Immunomodulator	
Insecticide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Insectiphile	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Juvabional	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvistat IC95=4,000-8,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Lipoxygenase-Inhibitor IC75=2.5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Mutagenic	Economic & Medicinal Plant Research, 6: 189.
Myoprotective	
Myorelaxant	Economic & Medicinal Plant Research, 6: 189.
Oviposition-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
PAF-Inhibitor	
Pesticide	
Protisticide	
Radioprotective	
Sunscreen	
Topoisomerase-II-Inhibitor IC50=1 ug/ml	Bernard, F. X., Sable, S., Cameron, B., Provost, J., Desnoettes, J. F., Crouzet, J., Blanche, F. 1997. Glycosylated Flavones as Selective Inhibitors of Topoisomerase IV. Antimicrobial Agents & Chemotherapy, 41: 992-998.
Vasodilator	
Vasopressor	
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

## SABINENE

Essential -- -- \*

Oil

### Activities (5)

Antibacterial	
Antiheicobacter	
Antiseptic	
Antiulcer	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

## SABINENE-ACETATE

Plant -- -- \*

## SABINENE-HYDRATE

Leaf 5.0 110.0 -0.99 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

## SALICYLATES

Leaf -- 700.0 0.95 \*

### Activities (7)

Antiaggregant	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antiinflammatory	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antipyretic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antiuricosuric	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Hyperglycemic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Hypoglycemic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Uricosuric	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

## SALVIGENIN

Essential -- -- \*

Oil

## Activities (60)

AP-1-Inhibitor 2-50 uM	
Analgesic 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anorexic	Cooper-Driver, G. A., Chemical substances in plants toxic to animals, pp. 213-47 in Rechcigl, M., Jr., ed. CRC Handbook of Naturally Occurring Food Toxicants, CRC Press, Boca Raton, 1983, 339 pp.
AntiHIV	
AntiNF-kB	
Antiacne 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiaggregant	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiangiogenic 2 uM	
Antiangiogenic 230 ug/kg orl rat	
Antiarthritic	
Antiasthmatic	
Antiatherosclerotic	
Anticataract 400 ug/day	
Anticirrhotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticlimacteric 200 ug/day	
Anticoronal 200 ug/day	
Antidandruff	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidepressant 200 ug/day	
Antidote (Mercury)	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antifibrotic 400 ug	
Antigout 200 ug	
Antikeshan	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antileukemic 1.6 mg/kg ipr mus	
Antileukotriene	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimaculitic	
Antimelanomic 480 ug/kg	
Antimenopausal 200 ug/day	
Antimetastatic 480 ug/kg	
Antimyalgic 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiosteоarthritic	
Antioxidant 100-200 (-400) ug/man/day	
Antiparkinsonian 200-400 ug/day	
Antiproliferant 2 uM	
Antiradicular 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antirheumatic	
Antisyndrome-X 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antitumor 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antitumor (Breast) 333.6 ug/day	
Antitumor (Breast) 0.8 mg/kg scu mus	
Antitumor (Breast) 150 ug/kg diet rat	
Antitumor (Breast) 230 ug/kg orl rat	
Antitumor (Lung) 240 ug/kg diet	
Antitumor (Prostate)	
Antitumor (brain) 38-150 ug/kg	
Antiulcerogenic	Rafatullah, S., Tariq, M., Al-Yahya, M.A., Mossa, J.S., and Ageel, A.M. 1989. Evaluation of Turmeric ( <i>Curcuma longa</i> ) for Gastric and Duodenal Antiulcer Activity in Rats. <i>J. of Ethnopharmacology</i> , 29: 25-34, 1990.
Anxiolytic	
Apoptotic	
Cancer-Preventive	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Cardioprotective 200 ug/day	
Depressant	Cooper-Driver, G. A., Chemical substances in plants toxic to animals, pp. 213-47 in Rechcigl, M., Jr., ed. CRC Handbook of Naturally Occurring Food Toxicants, CRC Press, Boca Raton, 1983, 339 pp.
Fungicide	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Immunomodulator	
Immunostimulant 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
NF-kB-Inhibitor	
Ornithine-Decarboxylase-Inhibitor	

Polyamine-Synthesis-Inhibitor  
Prostaglandin-Sparer Fujita, T., Nakatani, E., Funaishi, N., Sakuma, S., Fujimoto, Y. Potent inhibition of prostaglandin inactivation in rabbit gastric antral mucosal slices by selenium ions in-vitro. *J. Pharm. Pharmacol.* 42: 655-657, 1990.

Protein-Kinase-C-Inhibitor  
IC<sub>50</sub>=2-50 uM

VEGF-Inhibitor

SERINE Leaf 1460.0 6840.0 -0.89 USDA's Ag Handbook 8 and sequelae)

#### Activities (1)

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

SFA Leaf 2460.0 11520.0 -0.13 USDA's Ag Handbook 8 and sequelae)

SIDERITOFLAVONE Leaf -- -- \*

#### Activities (4)

Aldose-Reductase-Inhibitor

Antiarthritic

Anticataract 1 uM

Antiinflammatory

Barberan, F.A.T., Manez, S., and Villar\*, A. Identification Of Antiinflammatory Agents From Sideritis Species Growing In Spain. *Journal of Natural Products*, 50: 313, 1987.

SILICON Leaf -- -- \*

#### Activities (4)

Antiarteriosclerotic Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antonychotic

Antiosteoporotic

Cardioprotective

SODIUM Leaf 291.0 1950.0 -0.3 \*

#### Activities (1)

Hypertensive Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

STEARIC-ACID Leaf 250.0 1170.0 0.14 \*

#### Activities (8)

5-Alpha-Reductase-Inhibitor

Cosmetic Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

FLavor FEMA 2-4,000 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Hypocholesterolemic Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. *CRC Handbook of Lipids in Human Nutrition*. CRC Press. Boca Raton, FL. 233 pp.)

Lubricant Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Propecic

Suppository Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

TANNIN Plant -- -- \*

#### Activities (35)

Anthelmintic

AntiHIV

Antibacterial

Anticancer

Anticariogenic

Antidiarrheic

Antidysenteric

Antihepatotoxic

Antihypertensive

Antilipolytic

Antimutagenic

Antinephritic

Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. *Chem. Pharm. Bull.* 38(4): 1049-1052, 1990.

Antiophidic Economic & Medicinal Plant Research, 5: 363.

Antioxidant

IC<sub>50</sub>=1.44 ug/ml

**Quercetin**

Antiradicular 500 mg/kg/day orl mus	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Antiradicular 1/3 quercetin	
Antirenitic	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Antitumor	
Antitumor-Promoter	
Antiulcer	
Antiviral	
Cancer-Preventive	HerbalGram No. 22 - Spring 1990, page 14.
Carcinogenic	
Chelator	
Cyclooxygenase-Inhibitor	
Glucosyl-Transferase-Inhibitor	
Hepatoprotective	
Immunosuppressant	
Lipoxygenase-Inhibitor	
MAO-Inhibitor	
Ornithine-Decarboxylase-Inhibitor	
Pesticide	
Psychotropic	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Xanthine-Oxidase-Inhibitor	

TANNINS	Plant	60000.0	120000.0	-0.05	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.
---------	-------	---------	----------	-------	---

TERPINEN-4-OL	Essential Oil	--	--	*
---------------	---------------	----	----	---

**Activities (23)**

Allelopathic	Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002,Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.
Antiacetylcholinesterase IC21-24=1.2 mM	
Antiacne	
Antiallergic	
Antiasthmatic	Chin. J. Tuber. Respir. Dis., 4:203, 1982.
Antibacterial	
Antioxidant	
Antiseptic	Flav. & Frag. J. 9: 129.
Antispasmodic	
Antitussive	Chin. J. Tuber. Respir. Dis.
Antilulcer	
Bacteriostatic	Chin. J. Tuber. Respir. Dis.
Diuretic 0.1 ml/rat	
Fungicide	
Herbicide IC50=200 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Herbicide IC50=22 uM	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.
Insectifuge	
Irritant	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Pesticide	
Renoirritant	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Spermicide ED100=0.015	
Vulnerary	Lawrence Review of Natural Products, Jan-91.

TERPINOLENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
-------------	------	----	----	--

**Activities (9)**

Allelochemic	
Antifeedant	

Antioxidant	
Deodorant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Flavor FEMA 15-60	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	

THIAMIN	Leaf	--	12.1	0.79	Pedersen, M. 1987. <i>Nutritional Herbology.</i> Pederson Publishing. Bountiful, Utah. 377 pp.
---------	------	----	------	------	--

#### Activities (31)

Analgesic 1-4 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
AntiLyme 50 mg	
Antialcoholic 50-100 mg/day	
Antialzheimeran 100-3,000 mg/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antianorectic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antibackache 1-4 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antiberiberi	
Anticanker	
Anticardiospastic	
Anticataract	
Anticolic	
Antidecubitic	
Antideliriant	
Antidementia	
Antidyspeptic	
Antinecephalopathic	Martindale's 29th
Antifatigue	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antigastric	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antihangover 50 mg	
Antiheartburn	
Antihemipetic	
Antimigraine	
Antimyocarditic	
Antineuragic 1-4 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antineurasthenic	
Antineuritic	
Antineuropathic 50 mg	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antipoliomyelitic	
Insectifuge 75-150 mg/man/day	Martindale's 28th
Neuroprotective	
Pesticide	

THIAMINE	Leaf	2.0	12.1	1.68	*
THREONINE	Leaf	1540.0	7215.0	-0.86	USDA's Ag Handbook 8 and sequelae)

#### Activities (4)

Antioxidant?	
Antiulcer	Martindale's 29th
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Flavor FEMA 1,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

THYMOL	Essential Oil	--	--	*
--------	---------------	----	----	---

#### Activities (71)

Acaricide	
Allergenic	
Analgesic	Madaus, G. 1976. <i>Lehrbuch der Biologischen Hilfsmittel.</i> Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Ancylostomicide	Madaus, G. 1976. <i>Lehrbuch der Biologischen Hilfsmittel.</i> Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anesthetic	Madaus, G. 1976. <i>Lehrbuch der Biologischen Hilfsmittel.</i> Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Ankylostomacide	Madaus, G. 1976. <i>Lehrbuch der Biologischen Hilfsmittel.</i> Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

	Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antiacne	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Antiaggregant IC50=0.75	Tramil, 42: 511.
Antialzheimeran?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antiarthritic	Madaus, G. 1976. <i>Lehrbuch der Biologischen Hilfmittel</i> . Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antiatherosclerotic IC50=4 uM	
Antibacterial MIC=50-400 ug/ml	
Antibronchitic	Madaus, G. 1976. <i>Lehrbuch der Biologischen Hilfmittel</i> . Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anticariogenic MIC=200- 400 ug/ml	
Anticholinesterase	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antihalitosis	American Health, 12(4): 17, 1993.
Antiherpetic	Martindale's 28th
Antiinflammatory (=indomethacin)	
Antileptic	Madaus, G. 1976. <i>Lehrbuch der Biologischen Hilfmittel</i> . Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antimelanomic IC50=120 uM/l	
Antineuritic	
Antioxidant 100 ppm	Martindale's 28th
Antioxidant (LDL) IC50=4 uM	
Antiperiodontic MIC=50- 200 ug/ml	
Antiplaque MIC=39-625 ug/ml	Osawa, K., Matsumoto, T., Maruyama, T., Takiguchi, T., Okuda, K., and Takazoe, I. Studies of the antibacterial activity of plant extracts and their constituents against periodontopathic bacteria. <i>Bull Tokyo Dent. Coll.</i> , 31 (1), 1990, 17-21
Antiradicular EC=60	Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. <i>JEO</i> : 153-8.
Antirheumatic	Williamson, E. M. and Evans, F. J. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antisalmonella	
Antiseptic 20 x phenol	Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176)
Antispasmodic	
Antistaphylococcic	
Antistreptococcic MIC=200-400 ug/ml	
Antitrichinosic 5%	Madaus, G. 1976. <i>Lehrbuch der Biologischen Hilfmittel</i> . Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antitussive	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants</i> . CRC Press, Boca Raton, FL 435 pp.
Ataxigenic	Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253.
Candidicide 100 ug/ml (>Nystatin)	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Counterirritant	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Culicide LC50=36-49 mg/l	
Cyclooxygenase-Inhibitor (=indomethacin)	
Dentifrice	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Deodorant	Martindale's 28th
Dermatitogenic	
Enterorelaxant	J. Aromatherapy 4: 22.
Enterotoxic	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Expectorant	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
FLavor FEMA 2-100	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Merck 11th Edition
Gastroirritant	Martindale's 29th
Gram(+)icide MIC=200- 400 ug/ml	
Gram(-)icide MIC=50-200 ug/ml	
Insecticide LC50=36-49 mg/l	
Insecticide 0.22 uM/fly	
Insectifuge	
Irritant	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Larvicide 10 ppm	Berenbaum, M. R., The natives knew, Chemtech, (May), 1990, 275-279.
Larvicide 58 ppm	
Larvicide LC50=36-49 mg/l	
Molluscicide	
Myorelaxant	J. Aromatherapy 4: 22.

mg/ml					
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Pesticide					
Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.				
Sprout-Inhibitor	Duke, J.A.. Personal Communication.				
Tracheorelaxant					
Trichomonicide					
LD100=25 ug/ml					
Urinary-Antiseptic	Williamson, E. M. and Evans, F. J. Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.				
Varroacide					
Vermicide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.				

TIN Leaf 2.0 11.0 -0.55 \*

#### Activities (4)

Antiacne					
Antibacterial					
Pesticide					
Taenicide				Martindale's 28th	

TRANS-BETA-FARNESENE Essential Oil -- -- \*

#### Activities (2)

Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Pesticide					

TRANS-PIPERITOL Leaf 0.5 5.0 -0.56 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

TRANS-ROSE-OXIDE Plant 0.01 0.1 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

TRYPTOPHAN Leaf 580.0 2715.0 -0.3 USDA's Ag Handbook 8 and sequelae)

#### Activities (29)

Analgesic 750 mg/4x/day/orl/man	Martindale's 29th				
Antianxiety 500-1,000 mg/meal	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antidementia 3 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antidepressant 1-3 g/3x/day/orl/man	Martindale's 29th				
Antidyskinetic 2-8 g/orl/wmn/day	Martindale's 29th				
Antihypertensive	J. Agri. & Food Chemistry, 36: 1079.				
Antiinsomniac 1-3 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antimanic 12 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antimenopausal 6 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antimigraine 500 mg/mán/4x/day	Martindale's 29th				
Antioxidant 125 ug/ml					
Antiparkinsonian 2 g 3 x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antiphenylketonuric	Martindale's 29th				
Antiprostaglandin 250 pg/ml					
Antipsychotic 12 g/man/day	Martindale's 29th				
Antirheumatic	Martindale's 29th				
Antiscoliotic					
Carcinogenic	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses				
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, Londón. 791 pp.				
Hypnotic	Martindale's 29th				
Hypoglycemic	Economic & Medicinal Plant Research, 6: 157.				
Hypotensive 3 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Insulinase-Inhibitor	Economic & Medicinal Plant Research, 6: 157.				
Insulinotonic	J. Agri. & Food Chemistry, 36: 1079.				
Monoamine-Precursor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Prolactinogenic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Sedative 3-10 g/man/day					
Serotonergic 6-12 g/day/orl/man	Martindale's 28th				
Tumor-Promoter	J. Agri. & Food Chemistry, 36: 1079.				

TYROSINE	Leaf	1130.0	5295.0	-0.75	USDA's Ag Handbook 8 and sequelae)
<b>Activities (8)</b>					
Antidepressant?					
Antinecephalopathic	Martindale's 29th				
Antiparkinsonian 100 mg/kg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antiphenylketonuric	Martindale's 29th				
Antiulcer 256 mg scu	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.				
Antiulcer 400 mg/kg ipr rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Monoamine-Precursor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Basty College Publications, Seattle, Washington (Looseleaf).				
VALINE	Leaf	1870.0	8760.0	-1.1	USDA's Ag Handbook 8 and sequelae)
<b>Activities (3)</b>					
Antinecephalopathic	Martindale's 29th				
Essential					
FLavor FEMA 1,000-2,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
VANILLIN	Leaf	0.001	0.01		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<b>Activities (28)</b>					
Allelochemical IC50=4.26 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.				
Allergenic					
Antianemic					
Anticancer					
Antidrepanocytic					
Antiescherichic 10-100 mmol/l					
Antilactobacillic 10-100 mmol/l					
Antilisteria					
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.				
Antioxidant #NAME?					
Antipolio	Economic & Medicinal Plant Research, 5: 194.				
Antiradicular 7 x quercetin					
Antisickling					
Antitumor					
Antitumor-Promoter					
Antiviral	Economic & Medicinal Plant Research, 5: 194.				
Antiyeast 8-30 mM					
Bacteristat 10-40 mmol/l					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Candidicide 8-20 mM					
Choleretic	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.				
FLavor FEMA 50-20,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Immunosuppressant					
Insectifuge?	Martindale's 28th				
Irritant					
Perfumery					
Pesticide					
VIRIDIFLOROL	Leaf	1.0	15.0	-0.65	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<b>Activities (1)</b>					
Antiacetylcholinesterase IC50=25 ug/ml					
VITAMIN-B-6	Leaf	1.3	6.0	*	
WATER	Leaf	--	851000.0	0.22	*

**Activities (3)**

Aldose-Reductase-Inhibitor 10 uM	Okuda, I., Muwa, B., Inagakat, K., Horie, T., Nakayama, M. 1982. Inhibition of Aldose Reductases from Rat and Bovine Lenses by Flavonoids. Biochem Pharmacol, 31(23): 3807-3822.
Antineoplastic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Cytotoxic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

ZINC

Leaf -- -- \*

**Activities (77)**

ACE-Inhibitor	
Analgesic	
AntiBPH 25-60 mg/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
AntiCrohn's	
AntiHIV	
Antiacne 135 mg/day	
Antiacrodermatitic 8-34 mg/day/orl/chd	Martindale's 29th
Antialcoholic	
Antialope cic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antialzheimeran 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiangiogenic	
Antianorexic	Martindale's 29th
Antiarthritic 50 mg/3x/day/orl/man	
Anticanker 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticataract 30 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticoeliac	Martindale's 28th
Anticold 50 mg	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticolitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticorony 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antidandruff	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidementia	
Antidiabetic 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antidote (Cadmium)	Let's Live, May 1989.
Antidysgeuzic	
Antieczemic 150 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiencephalopathic	Martindale's 29th
Antiepileptic 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antifibrotic 30 mg	
Antifuruncular 45 mg/3x/day/man	Martindale's 28th
Antihangover 15 mg	
Antiherpetic? 25-60 mg/day	
Antiimpotence	Martindale's 29th
Antinfective 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiinfertility 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiinsomniac	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antilepric	Martindale's 29th
Antileukonychic	
Antilymphomeric	
Antimaculitic	
Antimetastatic	
Antineuropathic	
Antinyctalopic	
Antiobesity 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antosteoporotic	
Antiperiodontic	
Antiplaque	Martindale's 29th
Antiprolactin	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiprostatic 50 mg/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antirheumatic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiseptic 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antispare-Tire 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antistomatitic 50 mg/man/3x/day	Martindale's 28th

	INSULIN RESISTANCE. JOHN WILEY & SONS, NEW YORK. 272 pp. \$24.95
Antitinnititc 60-120 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antitriglyceride 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antiulcer 50 mg/3x/day/man	Martindale's 28th
Antiulcer 88 mg/rat/day/15 days	
Antiviral?	Martindale's 29th
Astringent	Martindale's 28th
Collagenic	
Copper-Antagonist	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Deodorant	Martindale's 29th
Detoxicant (Alcohol)	
Ergogenic	
Hypotensive 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Immunomodulator	
Immunostimulant	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Immunosuppressant 300 mg/day/6 wks/orl/man	Martindale's 29th
Insulinogenic 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Leptogenic 30-60 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Mucogenic	Li, K.M. Effect of zinc sulphate on acetic acid-induced gastric ulceration in rats. <i>J. Pharm. Pharmacol.</i> 42: 657-659, 1990.
NF-kB-Inhibitor	
Pesticide	
Spermigenic 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Testosteronogenic 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Trichomonicide	Martindale's 29th
Vulnerary	Martindale's 28th